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POLYPODIUM PARADISEÆ.

I.—VOL. I.

FERNS:

BRITISH AND EXOTIC.

VOLUME II.

CONTAINING

POLYPODIUM, IN CONTINUATION.
STRUTHIOPTERIS.
NEVRODIUM.
HYMENOLEPIS.
VITTARIA.
CERATOPTERIS.

BY

E. J. LOWE, ESQ., F.R.A.S., F.L.S., F.G.S., F.Z.S., M.B.M.S.,

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M DCCC LXII.

18 MAY 1939

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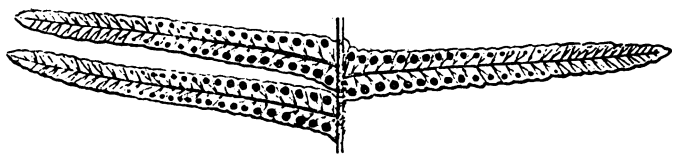
FERNS;

BRITISH AND EXOTIC.



Portion of mature Frond—under side.

POLYPODIUM PARADISEÆ.

LANGSDORFF AND FISCHER. KUNZE. MOORE AND HOULSTON. LINK. WILLDENOW. HOOKER. KAULFUSS.

PLATE I. VOL. II.

Polypodium paradisiæ,	FEE.
" *otites.*	OF GARDENS, (*not of* WILLDENOW.

Polypodium—Polypody. *Paradiseæ*—Paradise.

A CHARMING species, with a rough-looking dark green frond. An upright grower, although a slender-looking Fern. When in fructification the frond is handsome, the sori being very golden in appearance.

Only to be met with in the better collections.

An evergreen stove Fern.

Native of the West Indies, Brazil, and St. Catharine's Island.

It was introduced into the Royal Gardens, Kew, in the year 1841, having been received from the Royal Gardens of Berlin.

Easily propagated from divisions of the creeping rhizoma.

Very slender pubescent fronds, lanceolate-elongate in form, sub-pinnate, with linear segments, nearly horizontal, (or at right-angles to the main stem, narrowing both to base and apex.

Stipes very short, in a frond three feet in length, only one inch and a half long.

Length of frond from two to five feet. In a frond thirty-four inches in length there were eighty-three pairs of pinnæ.

Rachis and stipes blackish brown, hirsute, and much resemble the tail of a mouse.

Fronds articulated on a scaly creeping rhizoma.

Sori uniserial, terminal, about twenty-four pairs on each pinna, occupying nearly all the frond. Colour orange yellow.

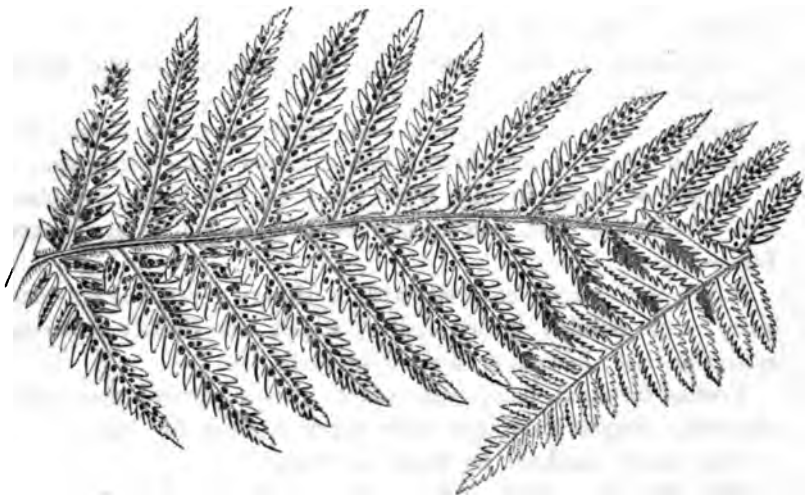
For plants of this species I am indebted to Mr. Clarke, Curator of the Royal Botanic Gardens, Glasgow; and to Messrs. Rollisson, of Tooting; and for fronds to Mr. J. Henderson, of Wentworth; Mr. Smith, Curator of the Royal Gardens, Kew; Mr. Norman, of Hull; and Mr. Sim, of Foot's Cray.

It may be procured of Messrs. A. Henderson, of Pine-apple Place; Booth, of Hamburg; Rollisson, of Tooting; Kennedy, of Covent Garden; and Sim, of Foot's Cray.

The illustration is from a plant in my own collection.

POLYPODIUM TRICHODES.

II—VOL. 2.



Portion of mature Frond—under side.

POLYPODIUM TRICHODES.

REINWARDT. J. SMITH. KUNZE. MOORE AND HOULSTON.

PLATE II. VOL. II.

Lastrea kunzei,	OF GARDENS.
Hypolepis trichodes,	FEE.
Lastrea paludosa,	OF GARDENS.
Aspidium uliginosum,	SCHOTT. M.S., *(not of* NEWMAN *or* BRAUN.)

Polypodium—Polypody. *Trichodes*—Hair-like.

A MAGNIFICENT, delicate-looking, large Fern, with vivid green fronds. It should be in every collection, and should especially be cultivated as an exhibition plant. It requires shade, as

sunshine very speedily blanches its large but delicate fronds. Easily cultivated, yet requiring abundance of pot-room.

An evergreen stove Fern.

Native of the East Indies.

Polypodium trichodes came up spontaneously at the Royal Gardens, Kew, in the year 1849.

Fragile fronds bi-tripinnate, with linear-lanceolate pinnæ, and pinnatifid pinnules, with bluntly-lobed rather ovate segments.

Length of frond usually from three to five feet; my plant has fronds five feet and a half in length, which are naked for two feet.

Stipes and rachis covered with a silvery green fine powder, hairy, with reddish brown scales, which are thickly scattered near the base, becoming thinner upwards.

Fronds terminal, being adherent to a stout somewhat creeping rhizoma. Stipes scaly, and very much so near the base.

Sori round, medial; brownish in colour.

The pinnules, when young, are broad and flat, yet when more mature contract by curling downwards. The midrib of the branches fluted.

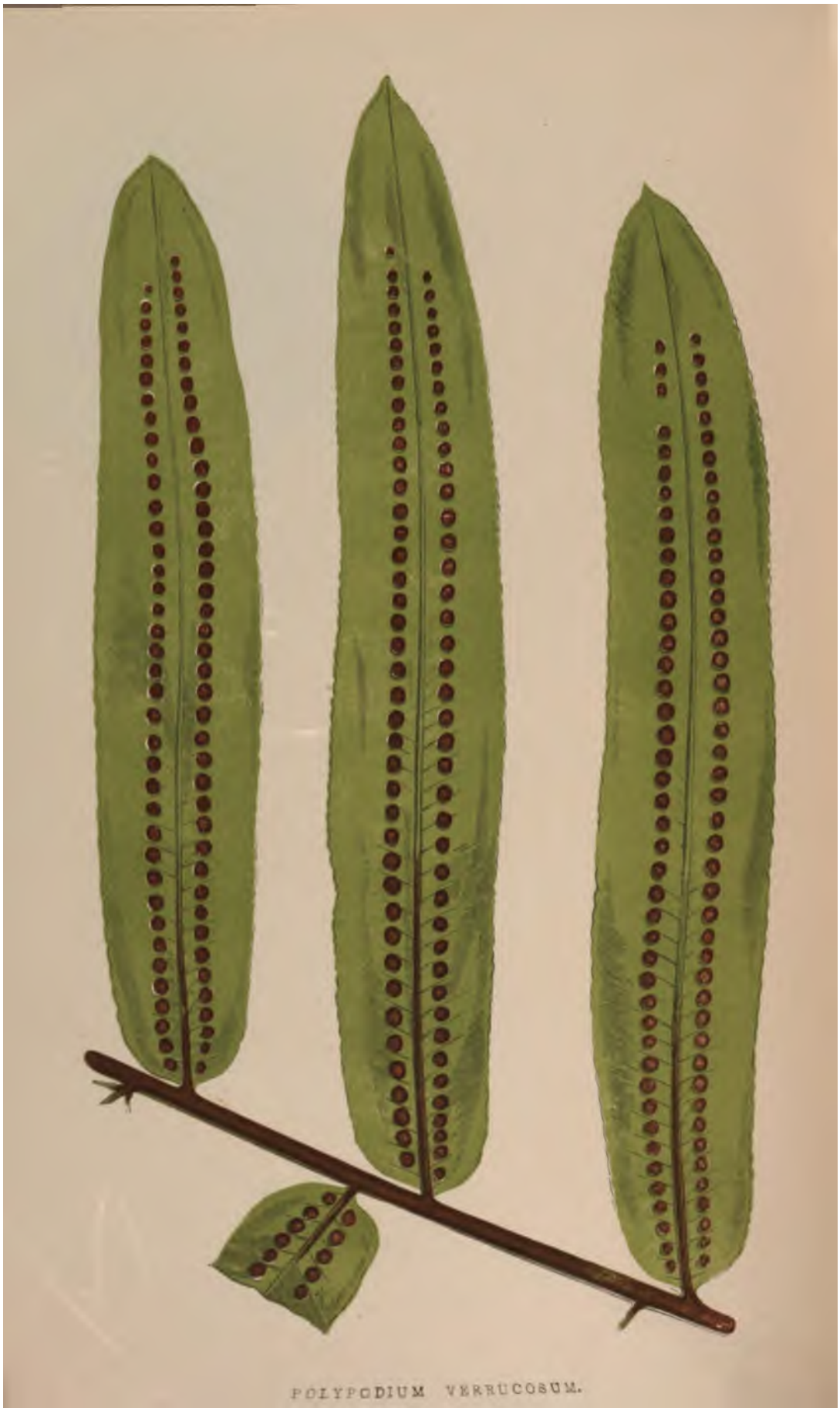
To the ordinary observer the *P. trichodes* is not much unlike a giant *Asplenium filix-fœmina* in general appearance.

This species must not be confounded with *Lastrea uliginosa* of Newman, which is said to be a variety of *L. cristata*.

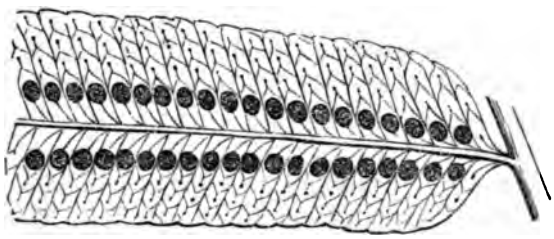
For plants I am indebted to Mr. Moore, Curator of the Chelsea Botanic Gardens; and to M. Schott, the Director of the Royal Botanic Gardens of Schonbrünn, near Vienna; and for fronds to Mr. Henderson, of Wentworth; and to Mr. Smith, of the Royal Gardens, Kew.

It is in the Catalogues of Messrs. Veitch, of Chelsea; Rollisson, of Tooting; Stansfield, of Todmorden; Sim, of Foot's Cray; and A. Henderson, of Pine-apple Place.

The illustration is from a young frond, from a plant in my own collection.



POLYPODIUM VERRUCOSUM.



Portion of Pinna of mature Frond—under side.

POLYPODIUM VERRUCOSUM.

LOWE.

PLATE III. VOL. II.

Goniophlebium verrucosum,	J. SMITH.
" "	MOORE AND HOULSTON. FEE.

Polypodium—Polypody. *Verrucosum*—Full of Warts.

IN THE SECTION GONIOPHLEBIUM OF AUTHORS.

THIS truly magnificent Fern is scarcely ever seen, although it has very few rivals in elegance of habit, indeed I am not aware that it has hitherto been introduced into any other garden besides that at Kew.

An evergreen stove species.

Native of the Islands of Philippine and Singapore.

Slender pendulous fronds, which are pubescent in a slight degree; the form of the frond lanceolate-acuminate; the form of the pinnæ oblong-acuminate, undulated, slightly serrate, base rounded and articulated with the rachis.

Sori uniserial, immersed deeply, forming elevated protuberances on the upper surface of the frond.

Length of frond from four to five feet; colour brilliant green. Rachis and stipes scaly, and being articulated on a creeping rhizoma.

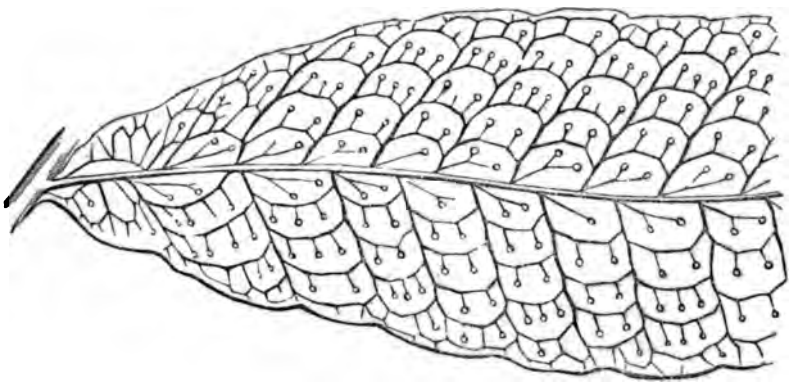
I have not been fortunate enough to procure a plant, but my thanks are due to Dr. Hooker and Mr. J. Smith, for fronds.

As yet the present rare species is not to be procured from our Nurserymen.

The illustration of three pinnæ is from a mature frond forwarded by Dr. Hooker, of the Royal Gardens, Kew.

POLYPODIUM DECURRENS.

IV.-VOL. 2.



Portion of Pinna of mature Frond--upper side.

POLYPODIUM DECURRENS.

RADDI. KUNZE.

PLATE IV. VOL. II.

Polypodium braziliense,	SCHOTT. MS.
" *simile,*	SPRENGEL.
Cyrtophlebium decurrens,	J. SMITH. MOORE & HOULSTON.
Campyloneurum "	LINK. PRESL.
Campylonevron "	FEE.

Polypodium—Polypody. *Decurrens*—Leaf-bordered-*stemmed.*

IN THE SECTION CYRTOPHLEBIUM OF AUTHORS.

THE *Polypodium decurrens* of Raddi is an interesting Fern, rendered a striking object from the distinct marking of the veins of its fronds. It does not appear to be the *P. decurrens* of the Gardens, for Kaulfuss remarks that it is the *Todea africana* of Willdenow.

An evergreen stove Fern.

Found growing in woods in Brazil.

Introduced into the Royal Gardens, Kew, in the year 1841; having been received from the Royal Gardens of Berlin.

Fronds glabrous, somewhat erect, pinnate, the pinnæ being lanceolate-acuminate in form, narrow, six to ten inches long; membranous, decurrent at the base, and extending down the rachis. One third of the stem naked.

Length of frond from twenty-four to thirty-six inches; colour pale green, with dark green club-headed veins.

Sori terminal, and pale straw-coloured.

Articulated with a scaly creeping rhizoma.

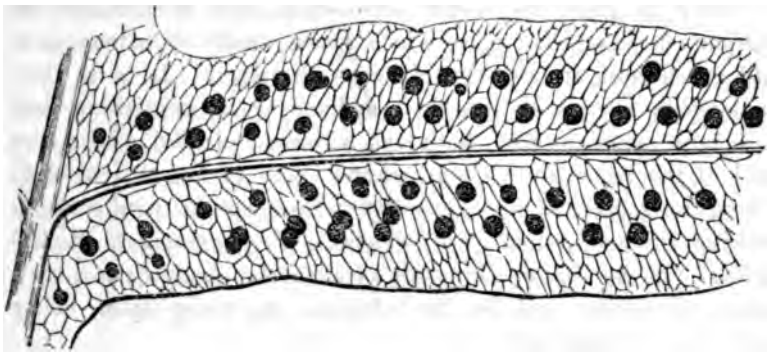
For plants of this species I am indebted to M. Schott, Director of the Royal Gardens of Schonbrünn, near Vienna; and to Mr. Clarke, Curator of the Royal Gardens, Glasgow; and for fronds to Mr. J. Henderson, of Wentworth; and to Sir William Hooker, Director of the Royal Gardens, Kew.

It may be procured of Messrs. Rollisson, of Tooting; and Messrs. Booth, of Hamburg.

The illustration is from a plant in my own collection.

POLYPODIUM AUREUM.

V–VOL. 2.



Portion of Pinna of mature Frond—under side.

POLYPODIUM AUREUM.

LINNÆUS. KUNZE. WILLDENOW. SCHKUHR. SPRENGEL. (*Not of* MARTENS AND GALLEOTTI.)

PLATE V. VOL. II.

Polypodium majus-aureum,	PLUMIER.
Phlebodium aureum,	HOOKER AND BAUER. R. BROWN.
" "	J. SMITH. PLUMIER.
" "	MOORE AND HOULSTON.
Pleopeltis aurea,	PRESL.
Chrysopteris aurea,	LINK. FEE.

Polypodium—Polypody. *Aureum*—Golden.

IN THE SECTION PHLEBODIUM OF AUTHORS.

AN especial favourite with growers. Its noble glaucous fronds, conspicuous sori, and curious hare's-foot rhizoma, render it a very attractive object. In its rhizoma it closely resembles the *Davallias*. Amongst the division *Phlebodium* there are several other species, such as *P. sporadocarpum*, *P. areolatum*, and *P.*

decumamum, that, in the glaucous character, and general form both of fronds and rhizoma, closely resemble *Polypodium aureum*. In order to grow the Fern luxuriantly, and as glaucous as possible, it should be placed in a warm shady situation; in a cold greenhouse it loses the glaucous character. It is a very manageable Fern, with less than ordinary care, flourishing best in a large shallow pan, with the rhizoma planted above the level of the pan; the rhizoma cannot bear to be buried, and, indeed this remark applies generally to those species with surface-growing rhizomas, such as *P. longipes*, *P. phymatodes*, *P. billardieri*, (in the section *Drynaria* of authors,) shallow pans, with plenty of surface soil for the rhizomas to creep upon, being preferable to deep soil.

An evergreen stove species.

Native of the American Meridian, the West Indies, and Surinam.

First introduced into England in the year 1742, and received into the Royal Gardens, Kew, in 1809, from the Royal Gardens of Berlin.

Easily propagated, both by division of the rhizoma and from spores, as it is a Fern of rapid growth.

Fronds glabrous and hanging down; pinnatifid, with lanceolate-acuminate broad segments, which are membranous and undulated. The segments are usually from eight to ten inches in length, having the margins entire.

Stipes and rachis extremely smooth, shining, having a pale brown or purplish bloom upon them.

Fronds lateral, being articulated on a thick creeping rhizoma. The rhizoma completely hid with the covering of pale reddish brown scales, the scales being nearly half an inch in length.

Length of frond from three to four feet; colour a silvery green.

Sori circular, biserial, but the rows not opposite each other, usually alternate, placing them in triangles, containing two on the bottom row, or that nearest the midrib, and one between them on the second row, or that nearest the margin of the segments. Colour of sori reddish brown.

For plants of this species my thanks are due to Sir Oswald Mosley, Bart., of Rolleston Hall, near Burton-on-Trent; Mr. Stewart, gardener to Lord Vernon; and to Mr. Haythorn,

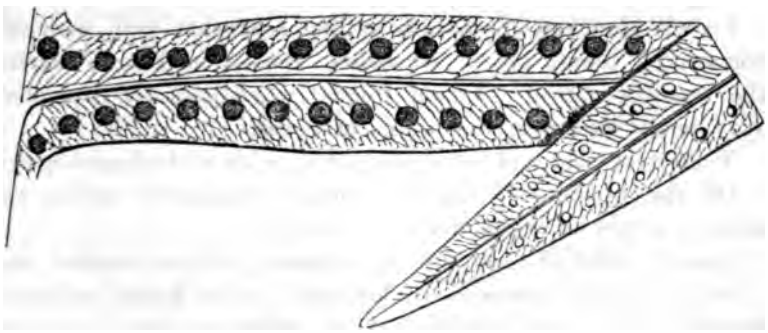
gardener to Lord Middleton; and for fronds to Mr. Norman, of Hull; Mr. Gray, of St. Thomas', Exeter; Miss Fellows, Beeston Field; Mr. Henderson, of Wentworth; and to M. Schott, Director of the Imperial Gardens of Schonbrünn, near Vienna.

It is in the Fern Catalogues of Messrs. Veitch, of Exeter; Booth, of Hamburg; Osborn, of Fulham; E. G. Henderson, of St. John's Wood; Rollisson, of Tooting; Kennedy, of Covent Garden; Stansfield, of Todmorden; A. Henderson, of Pine-apple Place; R. Sim, of Foot's Cray; E. Cooling, of Derby; Veitch, Jun., of Chelsea; and Masters, of Canterbury.

The illustration is from a plant in my own collection.

POLYPODIUM SPORADOCARPUM

VI—VOL 2



Portion of mature Frond.

POLYPODIUM SPORADOCARPUM.

WILLDENOW. KUNZE. HOOKER.

PLATE VI. VOL. II.

Polypodium areolatum, ?	WILLDENOW. SCHIEDE. LINNÆUS.
" *glaucum,*	OF GARDENS, (*not of* RADDI.)
Chrysopteris sporadocarpa,	LINK. FEE.
Phlebodium sporadocarpum,	J. SMITH. MOORE AND HOULSTON.

Polypodium—Polypody. *Sporadocarpum*—Spore-fronted.

IN THE SECTION PHLEBODIUM OF AUTHORS.

OPINION differs as to which is the handsomest Fern amongst the glaucous section *Phlebodium.* The present Fern is much less common than *Polypodium aureum,* and, in my opinion, a more beautiful species. The pinnæ are also narrower, and more distant from each other than in *P. aureum.*

Like *P. aureum* it is easily propagated, and it is more glaucous.

An evergreen stove Fern.

Native of Mexico.

Introduced into the Royal Gardens, Kew, in the year 1843, having been forwarded by Mr. D. Cameron.

Fronds glaucous, pinnatifid; outline somewhat oval, with stiff coriaceous, blunt, nearly lanceolate repand segments, having the margins entire. Young fronds, when partially expanded, very nearly resemble the wings of a bat.

Veins very pale and semitransparent, with club-shaped apices.

On the upper side of the frond, immediately within the margin, a row of white deciduous scales.

Usually eight or nine pairs of segments, with a terminal one.

Sori large and conspicuous, uniserial; colour bright yellowish brown; mostly about twenty-eight to thirty-two pairs on each segment.

Length of frond three feet; colour a milky green.

Stipes very smooth, brownish green, half the length of the frond, and having few long white scales near the base.

Fronds lateral, being articulated on a thick, glaucous, scaly, creeping rhizoma.

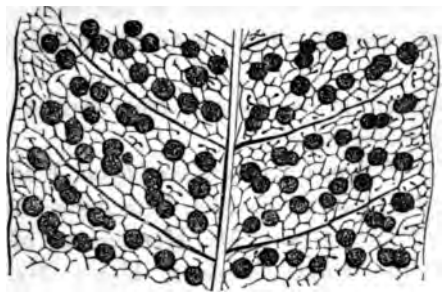
For plants of this species I am indebted to Mr. Henderson, of Wentworth; and for fronds to the same gentleman, and to Mr. Norman, of Hull.

It may be procured of the following Nurserymen:—Masters, of Canterbury; Veitch, of Chelsea; A. Henderson, of Pine-apple Place; Stansfield, of Todmorden; Kennedy, of Covent Garden; Rollisson, of Tooting; Osborn, of Fulham; and Booth, of Hamburg.

The illustration is from a plant in my own collection.

POLYPODIUM HEMIONITIDEUM.

VII.-VOL. 2.



Portion of mature Frond - under side.

POLYPODIUM HEMIONITIDEUM.

WALLICH.

PLATE VII. VOL. II.

Polypodium membranaceum,	KUNZE. DON. SPRENGEL.
Phyllitidis hemionitidea,	J. SMITH.
Drynaria "	J. SMITH. MOORE & HOULSTON.
Hemionitis plantaginea,	DON.
Selliguea hemionitidea,	PRESL.
Colysis "	FEE. PRESL.

Polypodium—Polypody. *Hemionitideum*—Spleenwort-like.

IN THE SECTION DRYNARIA OF AUTHORS.

A CURIOUS membranaceous crumpled-looking Fern, with simple fronds, yet rendered interesting from the large size and prominent character of its heaps of sori. A delicate species, and not common in cultivation.

An evergreen stove Fern.

From the East Indies.

Received at the Royal Gardens, Kew, in the year 1844, from the late Mrs. Lawrence, of Ealing Park.

Fronds glabrous, simple, broadly lanceolate in form, undulated, usually membranous, attenuated at the base.

Fronds lateral, articulated on a creeping rhizoma, which is scaly.

Length of frond from one to two feet; colour bright green.

Sori round and irregular.

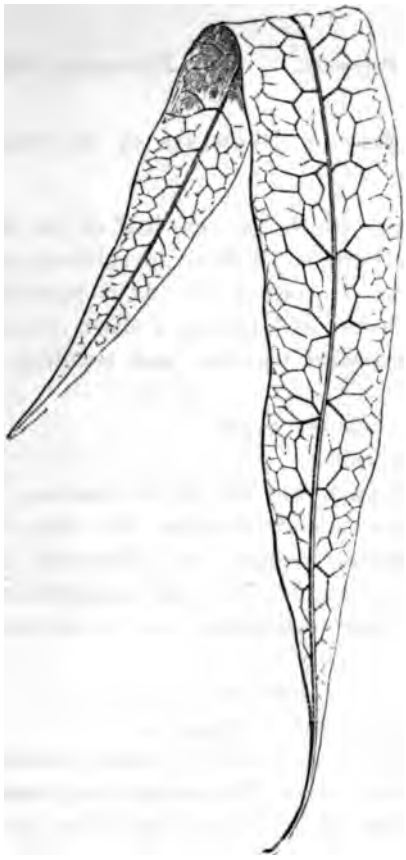
For a plant of *Polypodium hemionitideum* I am indebted to Mr. T. Downs, of Hillsbro' Terrace, Ilfracombe; and for fronds to Mr. Sim, of Foot's Cray; Mr. Henderson, of Wentworth; Dr. Hooker, of the Royal Gardens, Kew; Mr. Norman, of Hull; and Messrs. Booth, of Hamburg.

This Fern may be procured of Mr. Robert Sim, of Foot's Cray, Kent.

The illustration is from a plant in my own collection.

POLYPODIUM PUSTULATUM.

VIII.—VOL. 2.



A *simple* barren Frond—under side.

POLYPODIUM PUSTULATUM.

FORSTER. KUNZE. SPRENGEL.

PLATE VIII. VOL. II.

Polypodium scandens,	FORSTER. SCHKUHR. SCHOTT, MS.
Phymatodes pustulata,	J. SMITH. PRESL.?
Polypodium cæspitosum,	LINK? OF GARDENS.
Drynaria pustulata,	J. SMITH. FEE. MOORE & HOULSTON.
Polypodium brancæfolium,	PRESL.
Phymatodes "	PRESL.

Polypodium—Polypody. *Pustulatum*—Pimpled.

IN THE SECTION DRYNARIA OF AUTHORS.

A SINGULAR Fern, which has one half of its fronds simple and undivided. A Fern not difficult to cultivate with ordinary care, but seldom seen in collections. It is more singular than handsome, of dwarf habit, and having a short creeping rhizoma. It bears its fronds crowded together, and standing upright from the rhizoma.

An evergreen greenhouse Fern.

Native of New Zealand.

It was first introduced into the Royal Gardens, Kew, in the year 1826, having been brought there by Mr. Allan Cunningham.

Fronds erect, glabrous, simple, or pinnatifid, the segments being lanceolate-acuminate in form, and membranous.

Fronds lateral, being articulated on a cæspitose creeping rhizoma. Thin rhizoma.

Veins darker in colour than the frond.

Sori round, uniserial, and submarginal.

Length of frond from six to twelve inches, colour pale green.

Perhaps best known as the *Polypodium cæspitosum.*

My thanks are due for plants of this Fern, to M. Schott, Director of the Imperial Gardens of Schonbrünn, near Vienna; to Messrs. A. Henderson, of Pine-apple Place; Rollisson, of Tooting; Masters, of Canterbury; and Sim, of Foot's Cray; and for fronds to Mr. J. Henderson, of Wentworth; and Mr. Norman, of Hull.

The illustration is from a frond sent by Mr. Henderson, of Wentworth.

POLYPODIUM GRACILIS. P. SERPENS.

IX—VOL. I.

Portion of mature Frond—under side.

POLYPODIUM GRACILIS.

LOWE.

PLATE IX.—A. VOL. II.

Goniopteris gracilis. MOORE AND HOULSTON.

Polypodium—Polypody. *Gracilis*—Slender.

IN THE SECTION GONIOPTERIS OF AUTHORS.

THIS pretty little Fern has only lately been brought into notice; it is not unlike *Polypodium reptans* in general appearance, having slender weeping fronds. A somewhat rare species.

Fronds erect and narrow-elongate-lanceolate in form, being pinnate below, but pinnatifid and proliferous above. Lower pinnæ scarcely stalked, distant, deflexed, and obliquely subhastate; central pinnæ oblong-obtuse, falcate, adnate, and scarcely subhastate; near the base slightly crenate-lobate, otherwise entire; upper pinnæ shorter and confluent.

Rachis and the nerves beneath pubescent, with diminutive forked hairs; barren fronds more spreading, shorter, and the pinnæ placed closer together. Fronds terminal and adherent; both barren and fertile fronds bearing proliferous buds from

the rachis. The fertile fronds twice the length of the barren ones.

Sori uniserial to biserial, the spore cases being surrounded with forked hairs.

Length of frond from twelve to eighteen inches; colour deep green. Upper surface polished.

A stove Fern.

Native of Jamaica.

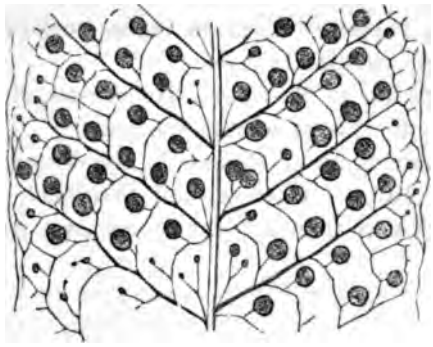
Introduced a few years ago into the Royal Gardens, Kew, and into the Glasnevin Gardens.

Mr. Moore remarks that it is closely allied to *P. reptans*, yet larger and shorter. *P. reptans* has shorter hairs, and has a prostrate habit.

I have not yet been enabled to procure a plant; for fronds I am indebted to Mr. Smith, Curator of the Royal Gardens, Kew.

It is in the Catalogue of Messrs. Sim, of Foot's Cray.

The illustration is from a frond forwarded by Mr. Smith, of Kew.



Portion of mature Frond—under side.

POLYPODIUM REPENS.

SWARTZ. KUNZE. WILLDENOW. PLUMIER.

PLATE IX.—B. VOL. II.

Cyrtophlebium repens,	J. SMITH.
Campyloneurum repens,	LINK. J. SMITH.

Polypodium—Polypody. *Repens*—Creeping.

IN THE SECTION CYRTOPHLEBIUM OF AUTHORS.

AN ornamental creeping Fern.

An evergreen stove species.

Native of the American Meridian, Jamaica, and the West Indies.

Introduced into England in 1816, and into the Royal Gardens, Kew, in 1841, from the Berlin Royal Gardens.

Fronds simple, lanceolate-acuminate in form, reclining, glabrous, undulated, decurrent at the base, somewhat membranous; fronds lateral, articulated on the rhizoma, which is creeping, slender, and scaly.

Upper surface of frond dotted over with white scales, attached opposite the apex of each veinlet.

Length from twelve to eighteen inches; colour deep green.

Sori terminal; circular in form.

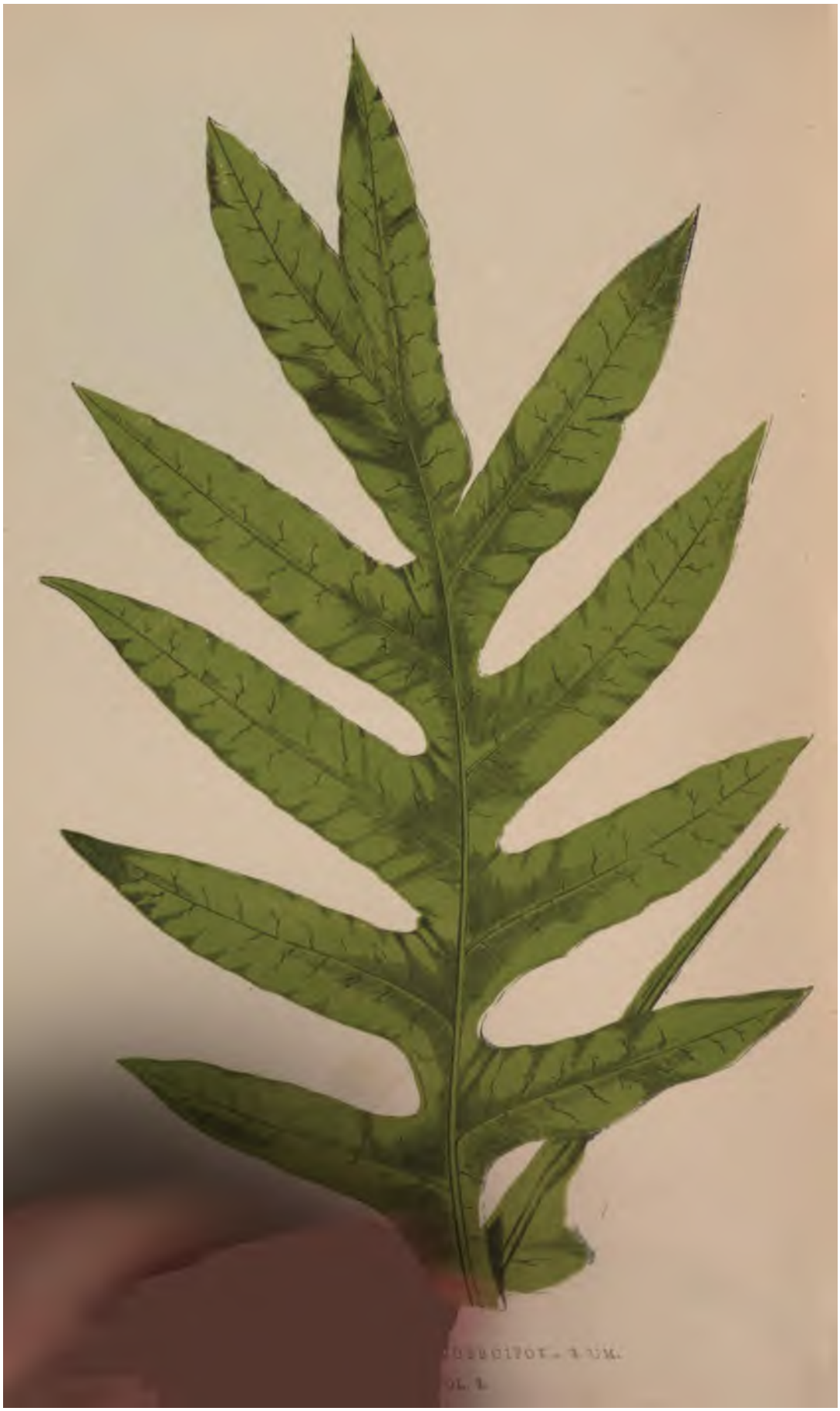
My thanks are due to Messrs. A. Henderson, of the Pine-apple Place Nursery, for plants of this species.

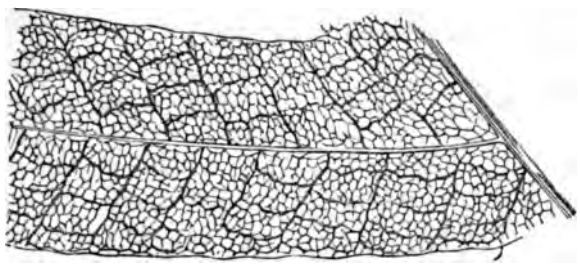
It is in the Catalogues of Messrs. A. Henderson, of Pine-apple Place; Veitch, Jun., of Chelsea; and Stansfield, of Todmorden.

The illustration is from a plant in my own collection.

POLYPODIUM QUERCIFOLIUM.

X—VOL. 2.





Portion of pinna of mature Frond--upper side.

POLYPODIUM QUERCIFOLIUM.

LINNÆUS. KUNZE.
KAULFUSS. SWARTZ. SPRENGEL. R. BROWN.

PLATE X. VOL. II.

Drynaria quercifolia,	BORY. MOORE & HOULSTON.
" "	J. SMITH. SCHKURH.

Polypodium—Polypody. *Quercifolium*—Oak-leaved.

IN THE SECTION DRYNARIA OF AUTHORS.

THIS very rare species is a noble Fern, and certainly no plant can be more aptly named. In the Royal Gardens, Kew, there is a handsome plant which receives general notice and admiration from its singular growth. This Fern is commonly to be met with in Catalogues, but unfortunately only the name, the species sold being the ***Polypodium phymatodes;*** however, as several Nurserymen have now procured it, those mentioned may be depended upon as supplying it true to its name.

An evergreen, exceedingly rigid species.

A native of New Holland, Java, China, Manilla, East Indies, Philippine Islands, and Molucca.

First brought into England in 1824, and introduced by Dr. Wallich into the Royal Gardens, Kew, in 1840.

Fertile and barren fronds different.

Sterile or barren frond sessile, oblong-ovate in form, cordate at the base, sinuose, with the vascular structure permanent and rigid.

Fertile frond stipitate, pinnatifid, with linear undulated acuminate segments; margin stout, articulated with the rachis.

Sori circular, oblique, and somewhat irregular, and spread along the whole of the under surface of the frond.

In the "Genera and Species of Cultivated Ferns," by Mr. Moore and Mr. Houlston, it is mentioned that there are several well-defined forms of this species, two of which are in cultivation in England; the first has cordate-ovate sterile fronds six inches in length, and stipitate fertile fronds two feet in length. The second is a noble plant, with cordate-oblong pinnatifid rigid sterile fronds, from three to four feet long, but it has not produced fertile fronds.

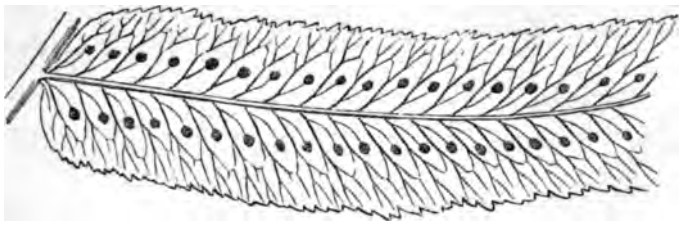
Rhizoma thick, scaly, and creeping.

For plants of this species I am indebted to Mr. Clarke, the Curator of the Royal Botanic Gardens, Glasgow, and to Mr. Stratton, of the Cambridge Botanic Gardens; and for fronds to Mr. Sim, of Foot's Cray, Kent.

It is in the Catalogues, *true* to its name, of Mr. Sim, of Foot's Cray, and Messrs. A. Henderson, of Pine-apple Place.

The illustration is from a barren frond forwarded by Mr. Sim, of Foot's Cray.

SUBPETIOLATUM.



Portion of pinna of mature Frond--under side,

POLYPODIUM SUBPETIOLATUM.

HOOKER. MOORE AND HOULSTON. KUNZE. J. SMITH.

PLATE XI. VOL. II.

Polypodium—Polypody. *Subpetiolatum*—Short-stalked.

Polypodium subpetiolatum is not well known by the Fern cultivators generally, being as yet chiefly confined to the largest collections.

It is an evergreen stove species.

Native of Mexico and Guatemala.

Introduced into the Royal Gardens, Kew, in 1845, having been forwarded by Mr. D. Cameron.

Frond pubescent, linear-lanceolate in form, pinnate, the pinnæ being entire, and destitute of a foot-stalk.

Lateral, articulated on a scaly creeping rhizoma.

Nearly all the fronds soriferous throughout.

Sori uniserial.

Length of frond from twelve to thirty-six inches; colour pale green.

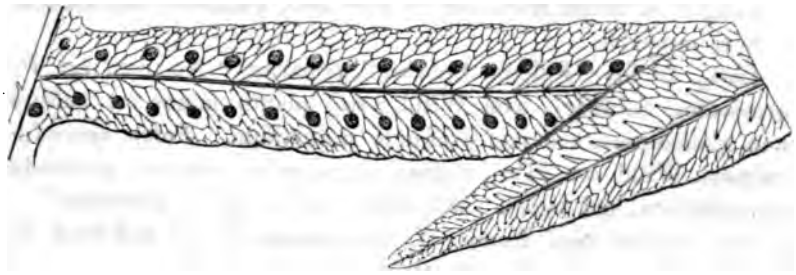
I have been unable to procure a plant of this Fern. For fronds I am indebted to Mr. Smith, of the Royal Gardens, Kew.

It is not in the Nurserymen's Catalogues.

The illustration is from Mr. Smith's frond.

POLYPODIUM AREOLATUM.

XII—VOL. 2.



Portion of mature Frond.

POLYPODIUM AREOLATUM.

HUMBOLDT AND BONPLAND. KUNZE. WILLDENOW.

PLATE XII. VOL. II.

Polypodium sporadocarpum,	LINK, (*not of* WILLDENOW.)
Chrysopteris sporadocarpa,	LINK. FEE?
Phlebodium areolatum,	OF GARDENS.

Polypodium—Polypody. *Areolatum*—In reference to the *Areolæ*.

IN THE SECTION PHLEBODIUM OF AUTHORS.

AN interesting although an imperfectly-known species, being seldom found in collections. It seems to be a more delicate Fern than most others in the section *Phlebodium*. Some authorities look upon it as merely a variety, yet it seems to have characters sufficiently distinct to warrant it taking the rank of a species, although it is oftentimes difficult to determine where varieties end and species begin.

An evergreen stove Fern.

Native of South America, Mexico, and Cumana.

Fronds deeply pinnatifid; segments narrowly lanceolate in form, somewhat acute, approximate, the edge moderately reflexed;

the frond becoming gradually narrower towards the apex; obtusely-elongate.

Length of frond from one to two feet; glaucous underneath. Sori uniserial.

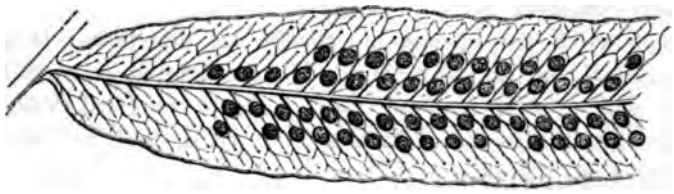
Link, in his "Filicum Species," remarks, "Nostrum est *P. areolatum*, Schiedei, nam Willdenowii planta minor est subtus non glaucescens, nec tam profunde pinnatifida. *Polyp. sporadocarpum*, Willd. sec. Hbr., majus quidem est, et non tam profunde pinnatifidum, sed tamen valde affine et vix specie diversum."

For a plant and fronds of this species I am indebted to Mr. Henderson, of Wentworth.

It is in the Catalogue of Mr. Kennedy, of the Bedford Conservatory, Covent Garden.

The illustration is from a frond forwarded by Mr. Henderson, of Wentworth.

POLYPODIUM MENISCIFOLIUM.



Portion of Pinna of mature Frond—under side.

POLYPODIUM MENISCIFOLIUM.

LINNÆUS, (*not* LANGSDORFF AND FISCHER, *nor* KUNZE.)

PLATE XIII. VOL. II.

Goniophlebium meniscifolium,	J. SMITH. LINK.
" "	MOORE AND HOULSTON.
" *neriifolium,*	OF GARDENS.
Polypodium preslianum,	SPRENGEL. KUNZE.
" *longifolium,*	PRESL.

Polypodium—Polypody. *Meniscifolium*—Meniscium-leaved.

IN THE SECTION GONIOPHLEBIUM OF AUTHORS.

A TALL-GROWING species, commonly to be met with in most collections, requiring no care, and growing rapidly.

An evergreen stove Fern.

Native of Brazil.

The fronds pinnate, the pinnæ being lanceolate-acuminate in form, undulated, and from six to eight inches in length, the upper base being adnate, and the inferior one somewhat rounded. Lateral, articulated on a scaly creeping rhizoma.

Stipes and rachis green.

Length of frond from three to four feet; colour bright shining green.

Sori usually biserial, bold, circular, and yellowish brown.

Introduced into the Royal Gardens, Kew, in 1841, having been received from Mr. H. Shepherd.

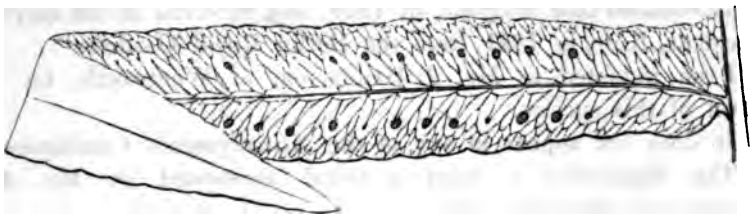
For plants of this species my thanks are due to Sir Oswald Mosley, Bart., of Rolleston Hall; Mr. J. Henderson, of Wentworth; and to Mr. Stewart, late gardener to Lord Vernon; and for fronds to Mr. Norman, of Hull, and to Mr. J. Henderson, of Wentworth.

It may be procured of Messrs. Rollisson, of Tooting; Kennedy, of Covent Garden; Veitch, Jun., of Chelsea; Masters, of Canterbury; Stansfield, of Todmorden; and Cooling, of Derby.

The illustration is from a plant in my own collection.

POLYPODIUM DECUMANUM.

XIV—VOL. I.



Portion of mature Frond.

POLYPODIUM DECUMANUM.

WILLDENOW. KUNZE.

PLATE XIV. VOL. II.

Phlebodium decumanum,	J. SMITH. MOORE AND HOULSTON.
Polypodium pulvinatum,	LINK.
Chrysopteris pulvinata,	LINK.
Phlebodium pulvinatum,	J. SMITH.

Polypodium—Polypody. *Decumanum*—Tall.

IN THE SECTION PHLEBODIUM OF AUTHORS.

ANOTHER interesting Fern closely allied to *Polypodium aureum*, *Polypodium sporadocarpum*, and other species figured in Plate XII, *(Polypodium areolatum.)* The fronds are much narrower and more slender than *Polypodium aureum*, and not nearly so glaucous as that species.

An evergreen stove species.

Native of Jamaica, South America, and Brazil.

Fronds glabrous, slender, pinnatifid, the segments being lanceolate-acuminate and membranous, slightly serrated on the edge, and from six to eight inches in length.

Fronds lateral, articulate on a creeping scaly rhizoma.

Sori uniserial, circular, and immersed.

Length of frond from two to three feet; colour light green.

Introduced into England in 1816, and received at the Royal Gardens, Kew, in 1841, from the Berlin Royal Gardens.

I am indebted to Mr. J. Henderson, of Wentworth, for a plant of this species.

It does not appear in any of the Nurserymen's Catalogues.

The illustration is from a frond furnished by Mr. J. Henderson, of Wentworth.

POLYPODIUM PENNIGERUM

XV—VOL. 3.

Portion of mature Frond—under side.

POLYPODIUM PENNIGERUM.

LOWE.

PLATE XV. VOL. II.

Goniopteris pennigera,	PRESL. MOORE AND HOULSTON.
" "	FORSTER. SMITH.

Polypodium—Polypody. *Pennigerum*—Feathered.

IN THE SECTION GONIOPTERIS OF AUTHORS.

Goniopteris pennigera of Presl is an ornamental species, somewhat delicate, yet easily propagated from the young viviparous plants growing on the upper portion of the frond.

An evergreen warm greenhouse species.

Native of New Zealand.

Introduced into the Royal Gardens, Kew, in 1835.

Fronds pinnate, the pinnæ being lanceolate-acuminate in form, slender, pinnatifid, bluntly lobed, rounded at the base, and covered with a thin pubescence.

Terminal, adherent to a creeping rhizoma.

Fertile fronds upright and contracted.

Rachis and stipes circular, pale green in colour.

Length of frond from twelve to twenty-four inches; colour bright green.

Sori medial, eventually becoming confluent.

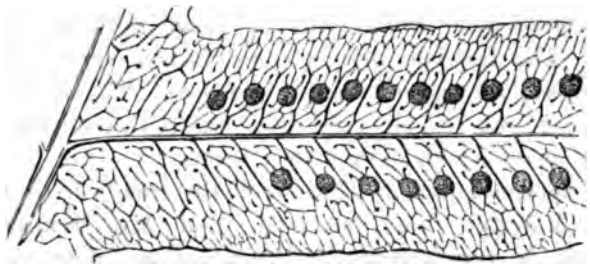
For plants of this Fern I am indebted to Messrs. Booth, of Hamburg; and for fronds to Mr. J. Henderson, of Wentworth.

It does not appear in any of the Nurserymen's Catalogues.

The illustration is from Mr. J. Henderson's frond.

POLYPODIUM LEPIDOPODUM.

XVI—VOL. I.



Portion of pinna of mature Frond—under side.

POLYPODIUM LEPIDOPODUM.

LINK. KUNZE.

PLATE XVI. VOL. II.

Chrysopteris lepidopoda, LINK.

Polypodium—Polypody. *Lepidopodum*—Scaly-footed.

IN THE SECTION DRYNARIA OF AUTHORS.

THE present Fern, regarding which so little is known, is a handsome species with brilliant green fronds, which are erect and fleshy; and, when a plant is well established, so closely do the fronds rise (from the spreading rhizoma) to each other, as to give the appearance of a miniature forest.

Usually treated as a greenhouse or half-hardy species; yet Mr. Booker informs me that it grew well in Mr. Clarke's Fernery at Matlock, without suffering during winter. It certainly requires no heat, at all events beyond the ordinary protection of a cool greenhouse.

It is not known from what country this species was introduced.

The fronds, which are pinnatifid, have an attenuated base,

and are composed of from three to six pairs of segments, obtusely lance-shaped, and usually almost, but not quite, opposite each other. Occasionally fronds will be found with the segments opposite. The incisions are in every instance rounded at the base; the terminal segment scarcely elongate. The stipes, rachis, and midrib of the segments distantly scattered over with solitary, somewhat pear-shaped, dark brown scales.

In the specimens which I have seen the fronds have all been barren. A fertile frond, received from Mr. Henderson, of Wentworth, is very sparing in fructification; they are large, but do not form those prominent umbones on the upper surface as is so well-marked a feature in *Polypodium longipes*, *P. billardieri*, and *P. phymatodes;* they more closely resemble those of *P. pustulatum*, and probably for this reason Kunze remarks that it is possibly a variety of *P. pustulatum;* yet it is undoubtedly distinct from that species, indeed very dissimilar in many respects.

Rhizoma creeping, branched, and densely covered with close dark brown scales.

Length of frond eighteen inches. Length of rachis about eight inches; colour when young, a vivid pale green, with darker veins which are well seen. The more mature fronds are darker, veins more indistinct, and the whole surface puts on a somewhat rusty appearance.

Segments much broader, shorter, and closer together than in *P. billardieri*.

An admirable exhibition plant, compact in habit, and easily cultivated and grown into a fine specimen.

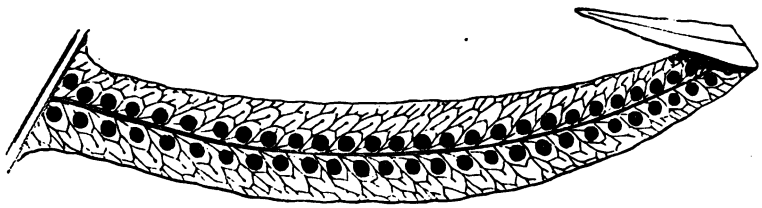
My thanks are due to Mr. Booker for plants of this species; and to Messrs. A. Henderson, of Pine-apple Place, for fronds.

It is in the Fern Catalogues of Messrs. A. Henderson, of Pine-apple Place, and Stansfield, of Todmorden.

The illustration is from a plant in my own collection.

POLYPODIUM PARPRODEE

XVII—Vol. 2.



Portion of mature Frond—under side.

POLYPODIUM HARPEODES.

LINK. KUNZE.

PLATE XVII. VOL. II.

Goniophlebium harpeodes,	J. SMITH. MOORE AND HOULSTON.
Marginaria harpeodes,	PRESL.

Polypodium—Polypody. *Harpeodes*—Scimitar-like.

IN THE SECTION GONIOPHLEBIUM OF AUTHORS.

AN interesting Fern, bearing a striking resemblance to the *Polypodium Catharinæ* of Langsdorff and Fischer, and figured in Vol. I., Plate XLIV., and described at page 131 of that volume.

Introduced into the Royal Gardens, Kew, in the year 1841, from the Royal Botanic Gardens of Berlin.

An evergreen stove species.

Native of Brazil.

Fronds pinnatifid, the pinnæ being nearly entire, lanceolate-acuminate, scimitar-shaped, the lower ones standing forwards. Fronds glabrous, broadly lanceolate in form, nearly erect in habit; articulated on a stout, scaly, creeping rhizoma.

POLYPODIUM HARPEODES.

Length from three to four feet; colour dull bluish green.

Stipes nearly half the length of the frond.

Veins much more indistinct than in *P. Catharinæ*.

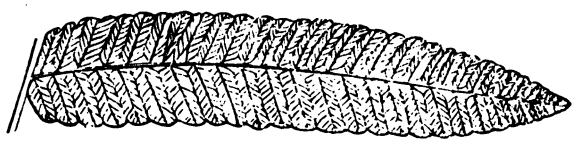
Sori uniserial, large, and yellowish brown in colour.

For fronds of this species my thanks are due to M. Schott, of the Imperial Gardens of Vienna, and to Mr. J. Smith, curator of the Royal Gardens, Kew.

A plant sent from Hamburg, by Messrs. Booth, as this Fern, proved to be the *P. Catharinæ* of Langsdorff and Fischer.

It does not appear to be in any of the Nurserymen's collections.

The illustration is from the frond forwarded by Mr. Smith, of Kew.



Portion of barren Frond.

POLYPODIUM PROLIFERUM.

LOWE. ROXBURGH AND WALLICH.

PLATE XVIII. VOL. II.

Goniopteris prolifera,	PRESL. J. SMITH. FEE.
" "	MOORE AND HOULSTON.
Meniscium proliferum,	SWARTZ.

Polypodium—Polypody. *Proliferum*—Proliferous.

IN THE SECTION GONIOPTERIS OF AUTHORS.

A SINGULAR, straggling, free-growing Fern, bearing young plants from the stipes of the fronds. These plants grow quite large fronds whilst on the parent stem, indeed the illustration is one of these plants. I believe that it has never fructified in this country.

A stove species.

Native of the East Indies.

Introduced into England in the year 1820.

Fronds pinnate, slender, pinnæ membranous, oblong-acuminate in form, and pubescent; slightly cordate at the base, and having the margin crenate-dentate. Lateral, adherent to a creeping rhizoma.

Length from twelve to thirty-six inches; colour dull green.

thanks are due to Mr. J. Henderson, of Wentworth, for nds of this Fern.

It is not in any of the Nurserymen's Catalogues.

The illustration is from a frond sent by Mr. Henderson, of Wentworth.

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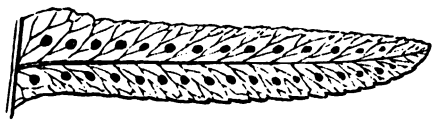
The illustration is from a frond sent by Mr. Henderson, of Wentworth.



Portion of mature Frond—under side.

POLYPODIUM APPENDICULATUM.

LINDEN. J. SMITH.

PLATE XIX. VOL. II.

Polypodium scriptum,	OF GARDENS.
Goniophlebium appendiculatum,	MOORE.

Polypodium—Polypody. *Appendiculatum*—Appendaged.

THIS very beautiful Fern is but little known amongst cultivators generally. The club-headed apices of the veins and the veins themselves being bright purple crimson, the frond has a singularly beautiful appearance.

An evergreen stove Fern.

Native of Mexico.

Fronds deeply pinnatifid or subpinnate, segments linear-oblong, acute, or attenuate; lower one sublobate. Form of the frond oblong or elongately triangular, with a broad base of from four to five inches wide.

Rachis, costa, and veins purplish crimson in colour. Stipes five inches in length, and when mature greenish.

Rhizoma green, smoothish, and creeping, and having brown scales.

Length twelve inches; colour pale green.

Sori small and sub-immersed, uniserial, situated on the apices of the lower anterior veinlets.

Lobes linear-oblong, acute, or with a lengthened tapering apex.

This plant has the habit and general appearance of the *Polypodium vulgare* of Linnæus, except as regards colour, and the upper surface differs also in being frosted over with a diminutive white pubescence, giving it a velvety appearance.

To Mr. J. Veitch, Jun., of Chelsea, my thanks are due for a plant of this lovely Fern, and to Mr. J. Henderson, of Wentworth, for fronds.

Mr. J. Veitch, Jun., appears to be the only Nurseryman at present who has this Fern.

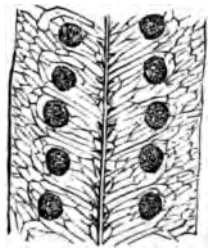
The illustrations are from fronds off a plant in my own collection; the fertile frond from Mr. J. Henderson, of Wentworth.

POLYPODIUM PERCUSSUM.

XX—Vol. I.

POLYPODIUM PERCUSSUM.

XX.—Vol. 2.



Portion of mature Frond—under side.

POLYPODIUM PERCUSSUM.

CAVANILLES. KUNZE. SWARTZ. KAULFUSS. WILLDENOW. RADDI. LANGSDORFF AND FISCHER. SPRENGEL.

PLATE XX. VOL. II.

Pleopeltis percussa,	PRESL. HOOKER AND GREVILLE.
" "	J. SMITH. LINK.
Polypodium cuspidatum,	PRESL.
" *avenium,*	DESVAUX.
Phlebodium percussum,	J. SMITH. MOORE AND HOULSTON.
Drynaria percussa,	FEE.

Polypodium—Polypody. *Percussum*—Stricken.

IN THE SECTION PLEOPELTIS OF AUTHORS.

THE *Polypodium percussum* is a dwarf creeping species, with bold, large fructification, which gives the frond a noble appearance. It perhaps requires more than ordinary care to grow this species successfully. As a general rule, the Ferns with creeping sori require to be planted with the rhizomas above

the soil, or they are very apt to decay, consequently many plants are lost through improper planting.

An evergreen stove Fern.

Native of Brazil, Tropical and South America, Surinam, St. Catharine, and Peru.

Introduced into the Royal Gardens, Kew, in the year 1842, having been received from Mr. Henderson.

Fronds nearly erect, simple, lanceolate-acuminate in form, cuspidate, coriaceous; base attenuated, the surface covered everywhere with small peltate, fimbriate scales. Lateral, articulated on a scaly, creeping, thin rhizoma.

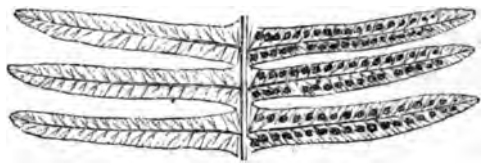
Length of frond from six to twelve inches; breadth one inch and a half; colour bright green and shining, paler beneath.

Sori large and bold, uniserial, situated in dense compact tufts of narrow scales.

I am indebted to Mr. R. Sim, of Foot's Cray, for a plant and fronds of this Fern.

It is in the Catalogues of Mr. R. Sim, of Foot's Cray; Mr. J. Veitch, Jun., of Chelsea; and Mr. Kennedy, of Covent Garden.

The illustration is from a plant in my own collection.



Portion of mature Frond—under side.

POLYPODIUM PECTINATUM.

LINNÆUS. PLUMIER. J. SMITH. MOORE AND HOULSTON.
PRESL. KUNZE. SCHKUHR. PLUKENET. FEE.

PLATE XXI. VOL. II.

Polypodium—Polypody. *Pectinatum*—Comb-*leaved.*

THE *Polypodium pectinatum* of Linnæus is a somewhat similar looking species to the *P. paradiseæ* of Langsdorff and Fischer, figured in the present volume, Plate I., and described at page 1, and also bears some resemblance to the more dwarf *P. plumula* of Humboldt and Bonpland, figured on Plate XLI., vol. 1, and described on page 123: this latter Fern seems to be the *P. Schkuhrii* of Raddi.

An evergreen stove species.

Native of Tropical America and the West Indies.

Introduced into this country in the year 1793.

Fronds sub-pinnate, the pinnæ being linear, parallel, and horizontal. Pubescent, lateral, articulated on a creeping rhizoma.

Length of frond from twelve to thirty inches; colour dull green.

Stipes and rachis black.

Sori circular, uniserial; colour a rich yellowish brown, and covering the whole under surface.

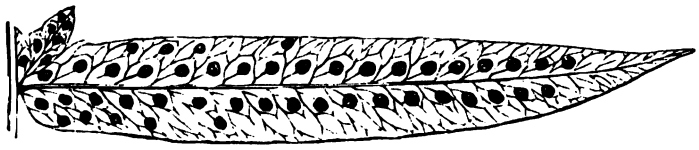
For a plant of this species I am indebted to Mr. Henderson, of Wentworth; and for fronds to Mr. J. Smith, Curator of the Royal Gardens, Kew; Mr. Henderson, of Wentworth; and Mr. Norman, of Hull.

It is in the Fern Catalogue of Messrs. Kennedy, of Covent Garden; Veitch, of Exeter; Veitch, Jun., of Chelsea; Stansfield, of Todmorden; Sim, of Foot's Cray; and Booth, of Hamburg.

The illustration is from a frond forwarded by Mr. Smith, from the Kew collection.

POLYPODIUM VACILLANS.

XXII—Vol. 2.



Pinna of mature Frond—under side.

POLYPODIUM VACILLANS.

LINK. KUNZE.

PLATE XXII. VOL. II.

Goniophlebium vacillans,	J. SMITH.
Polypodium baccilare,	SCHOTT, M.S.
" *repandulum,*	KAULFUSS.

Polypodium—Polypody. *Vacillans*—Wavering.

IN THE SECTION GONIOPHLEBIUM OF AUTHORS.

AN exceedingly rare Fern, which I received, in 1856, from M. Schott, from the Imperial Gardens of Vienna, a plant of which I have this year forwarded to the Royal Gardens, Kew, and from which Mr. Smith recognises it as the *Polypodium vacillans* of Link. It partakes somewhat of the characters of *P. harpeodes,* (Plate XVII., Vol. II.,) and *P. Catharinæ,* (Plate XLIV., Vol. I.)

An evergreen stove Fern.

Native of Brazil.

Frond pinnatifid, broadly lanceolate, about twenty-three pairs of pinnæ or segments, (and a larger ultimate one,) which are oblong-obtuse in form, rugous, and largest at the base of the frond, gradually becoming smaller nearer the apex; length of largest

five inches, width three-quarters of an inch, the lower ones standing forwards. The edges slightly recurved.

Stipes hairy at the base, circular, and for about three inches below the lowest pinnæ a narrow decurrent portion runs on each side the pinnæ down the stipes.

Length of frond twenty-eight inches, of which twelve inches is naked; colour dull green.

Rhizoma creeping, branched, and partially covered with brown net-work scales, giving it a spotted appearance.

Veins pale green, semi-transparent, forked, having club-headed apices, on which the sori is formed.

Sori uniserial; colour reddish brown.

For a plant of this species I am indebted to M. Schott, of the Imperial Gardens of Vienna.

It is not in any of the Nurserymen's Catalogues.

The illustration is from a plant in my own collection.

POLYPODIUM DIVERGENS.

XXI.1—VOL. 2.

Portion of mature Frond—upper side.

POLYPODIUM DIVERGENS.

WILLDENOW. KUNZE. LINK. J. SMITH. JACQUIN. PRESL. SPRENGEL. SCHKUHR.

PLATE XXIII. VOL. II.

Phegopteris divergens,	FEE. J. SMITH.
Polypodium multifidum,	JACQUIN, (*not of* BORY, SWARTZ, *or* SPRENGEL.

Polypodium—Polypody. *Divergens*—Spreading.

IN THE SECTION PHEGOPTERIS OF AUTHORS.

ONE of the most magnificent of the Exotic Ferns, and very similar in appearance and habit to the *Polypodium effusum* of Swartz, (figured in Vol. I., Plate XXIII., and described on page 73.)

An evergreen stove Fern.

Native of the West Indies, American Meridian, and Caraccas.

Introduced into the Royal Gardens, Kew, in 1841, having been received from the Royal Botanic Gardens of Berlin.

The frond quadripinnatifid, pinnæ lanceolate, pinnules linear-lanceolate, serrate, the serratures very acute. Frond membranous.

Rachis above furrowed, and densely pubescent.

Stipes sparingly scattered with scales.

Sori circular, medial; veins pinnately forked.

The form of the frond is so similar to that of *P. effusum*, that an ordinary observer would with difficulty find out the difference. In *P. effusum* the serratures are scarcely acute. The rachis above scarcely pubescent, and the stipes, especially near the base, is densely covered with scales.

P. divergens is a more tender species, the fronds paler and more yellow in colour, and the pinnules are short and deeply divided.

Length of frond four to five feet.

My thanks are due to Mr. Smith, Curator of the Royal Gardens, Kew, for a frond of this species.

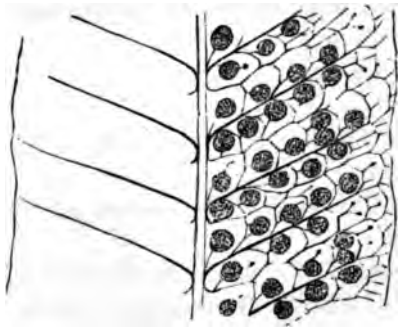
It is not in the Catalogues of any of our Nurserymen.

The fronds are proliferous; it is therefore very readily propagated.

The illustration is from Mr. Smith's frond.

POLYPODIUM NITIDUM.

XXIV—Vol. 2.



Portion of mature Frond—under side.

POLYPODIUM NITIDUM.

KAULFUSS. KUNZE.

PLATE XXIV. VOL. II.

Campyloneuron nitidum,	J. SMITH.
" *phyllitidum,*	BERLIN GARDENS.
Cyrtophlebium nitidum,	J. SMITH. MOORE AND HOULSTON.
Campyloneurum "	PRESL.
Campylonevron nitidum,	KAULFUSS. FEE.

Polypodium—Polypody. *Nitidum*—Shining.

IN THE SECTION CYRTOPHLEBIUM OF AUTHORS.

A STRONG-GROWING, simple-fronded, erect, rigid species, with shining fronds, and not difficult to grow into a good specimen.

An evergreen stove Fern.

Native of Tropical America, the West Indies, and St. Catharine's Island.

Fronds glabrous, coriaceous, simple, undulated, lanceolate-

acuminate, being decurrent at the base; lateral, articulated on a short creeping scaly rhizoma.

Length of frond from twelve to twenty-four inches; colour deep green, and shining.

Sori medial or terminal.

Veins indistinct.

Introduced into the Royal Gardens, Kew, in the year 1828, by Mr. W. Morrison.

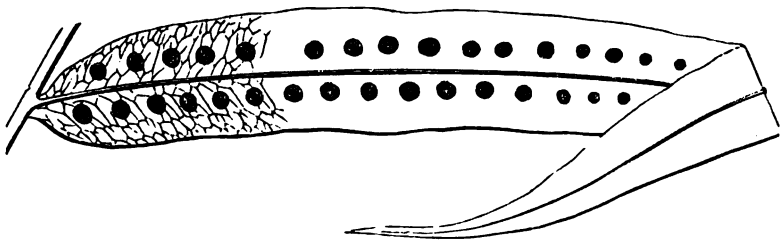
My thanks are due to Mr. Henderson, of Wentworth, for a plant of this Fern.

It may be procured of Messrs. A. Henderson, of Pine-apple Place; Kennedy, of Covent Garden; and Booth, of Hamburg.

The illustration is from a plant in my own collection.

POLYPODIUM CUSPIDATUM.

XXV—Vol. 2.



Pinna of mature Frond—under side.

POLYPODIUM CUSPIDATUM.

DON. KUNZE. SPRENGEL. (*not* BLUME *or* PRESL.)

PLATE XXV. VOL. II.

Phymatodes cuspidata,	J. SMITH.
Polypodium leiorhizum,	WALLICH. KUNZE.
Phymatodes leiorhiza,	PRESL.
Drynaria "	J. SMITH. MOORE & HOULSTON.
Pleopeltis cuspidata,	MOORE.

Polypodium—Polypody. *Cuspidatum*—Pointed.

IN THE SECTION DRYNARIA OF AUTHORS.

A HANDSOME Fern, with an extraordinary large, creeping, smooth, spotted, snake-like rhizoma, and smooth, shining fronds.

An evergreen stove species.

Native of the East Indies,—Nepal.

Fronds glabrous, pinnate, the pinnæ lanceolate-acuminate, ending in a very fine point; the inferior pinnæ petiolate, but the upper ones adnate and decurrent; about twenty pairs of pinnæ on each frond.

Length of frond from twenty-four to forty-four inches; colour

bright shining green; length of pinnæ from six to eight inches.

Sori circular, uniserial, at first minute and white, eventually becoming very large, and orange-yellow in colour. About thirty-six pairs of sori on each pinna, and raising slight umbones on the upper surface.

Fronds lateral, being articulated on a very thick, creeping smooth, branched rhizoma, bright green in colour, scattered over with large brown scales. Rhizoma about two inches and a half in circumference.

Introduced into the Royal Gardens, Kew, in the year 1844, by Mr. John Cristie.

Stipes pale green on upper side, rich brown below, the two colours being divided by a narrow belt of pale green.

The fronds stand nearly erect, whilst the pinnæ are pendulous. The width of the frond is the same, except near the apex, where it becomes narrower.

The plant in my collection has fronds four feet in length; with pinnæ thirteen inches long, and not an inch wide in the broadest part. The stipes about fourteen inches in length.

This Fern, although by no means in general cultivation, is best known under the name of *Drynaria leiorhiza.*

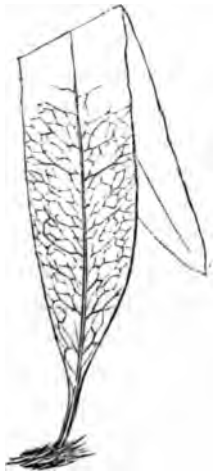
My obligations are due to Messrs. Rollisson, of Tooting, for a plant of *Polypodium cuspidatum;* and to Messrs. Booth and Sons, of Hamburg; Mr. Henderson, of Wentworth; Mr. Moore, of the Chelsea Botanic Gardens; and Mr. Norman, of Hull, for fronds.

It can be procured of Messrs. Rollisson, of Tooting, and Mr. R. Sim, of Foot's Cray; and their Catalogues appear to be the only ones which contain this Fern.

The illustration is from a plant in my own collection.

POLYPODIUM LYCOPODIOIDES.

XXVI—Vol. 1.



Mature Frond—upper side.

POLYPODIUM LYCOPODIOIDES.

LINNÆUS. PLUMIER. KUNZE. SCHKUHR. (*not of* MEYER.)

PLATE XXVI. VOL. II.

Drynaria lycopodioides,	FEE.
Anapeltis "	J. SMITH.
Pleopeltis "	PRESL. LINK.
Phlebodium "	J. SMITH. MOORE & HOULSTON.
Polypodium glabellum,	R. HEWARD. J. SMITH.

Polypodium—Polypody. *Lycopodioides*—Club-moss-like.

IN THE SECTION PLEOPELTIS OF AUTHORS.

A VERY dwarf, trailing, shining-leaved Fern, and exceedingly pretty when well grown.

An evergreen stove Fern.

ıe West Indies, American Meridian, Island of Mau-
rtinica, Jamaica, and Hispaniola.

luced into this country in the year 1793, and into the
ı Gardens, Kew, in 1821, from Mr. D. Cameron.

rronds simple, oblong-lanceolate in form, being attenuated at
he base, and blunt at the apices, membranous and undulated.
it l, articulated on a creeping rhizoma, which is scaly.

ngth of frond from two to four inches; colour rich green,
and shining.

Sori circular and uniserial.

thanks are due to Mr. Stratton, Curator of the Botanic
ens, Cambridge; Messrs. Rollisson, of Tooting; and Mr.
ı Henderson, of Wentworth, for plants of this Fern; and
to the latter gentlemen; Mr. Norman, of Hull; and M. Schott,
of the Imperial Gardens, Vienna, for fronds.

It is contained in the Catalogues of Messrs. Veitch, Jun., of Chelsea; Masters, of Canterbury; E. G. Henderson, of St. John's Wood; R. Sim, of Foot's Cray; Rollisson, of Tooting; and Kennedy, of Covent Garden.

The illustration is from a frond forwarded by Mr. Joseph Henderson, of Wentworth.

POLYPODIUM INTEGRIFOLIUM.

XXVII—Vol. 2.

Portion of mature Frond—under side.

POLYPODIUM INTEGRIFOLIUM.

LOWE.

PLATE XXVII. VOL. II.

Drynaria integrifolia,	OF GARDENS.
Microsorum irioides, var.	J. SMITH.

Polypodium—Polypody. *Integrifolium*—Entire leaf.

IN THE SECTION DRYNARIA OF AUTHORS.

THE present Fern appears to have spread itself into collections from Messrs. Rollisson, of Tooting. It is a handsome species, and very unlike *Polypodium irioides*, of Poiret, except in its fructification. Some of our best botanists consider it as only a variety of *P. irioides;* however this may be, it has been deemed advisable to figure it.

Fronds simple, ensiform; apex attenuated, sometimes bifid; margin of the frond straight, instead of the irregular lobes, as in *P. irioides.* Fronds hanging nearly horizontal, (not erect, like *P. irioides,* and with much fewer scales than in that species.) Consistency not so fleshy and stiff, nor so yellow in colour as *P. irioides.*

creeping. Fronds crowded.

of frond eighteen inches; breadth in widest part two a half.

1 ninutive, numerous, thickly scattered over the upper of the frond.

internal and scarcely to be seen.

thanks are due to Messrs. Rollisson, of Tooting, for plants ronds of this Fern.

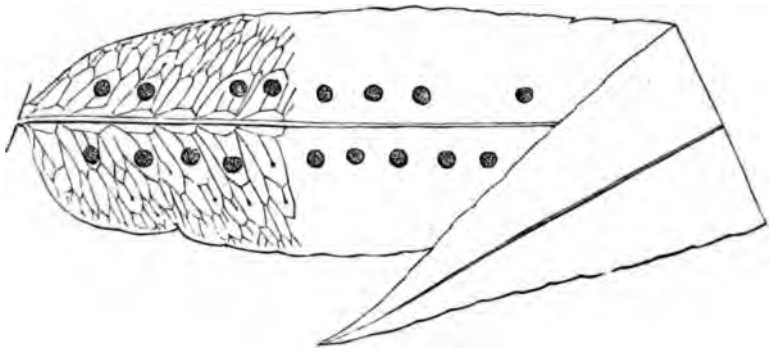
is in Messrs. Rollisson's collection at Tooting.

illustration is from a plant in my own collection.

There seems to be some obscurity regarding this class of Ferns. Fee gives six species, namely, *Irioides, Irregulare, Longissimum, sile, Trifidum,* and *Palmatum.* The *Irregulare* of Link seems to be a very different Fern to the *P. irioides;* and another species known in gardens as the *P. platyotis* is also distinct, s indeed the present Fern appears to be. There is a marked ference in the habit and venation of these species, yet, owing the latter being so imperfectly seen, the differences are not well understood.

POLYPODIUM INÆQUALE.

XXVIII—Vol. 2.



Pinna of mature Frond—under side.

POLYPODIUM INÆQUALE.

LINK? KAULFUSS? KUNZE?

PLATE XXVIII. VOL. II.

Goniophlebium inæquale,	J. SMITH.
Phlebodium "	MOORE.
Polypodium triseriale,	OF GARDENS.

Polypodium—Polypody. *Inæquale*—Unequal.

IN THE SECTION GONIOPHLEBIUM OF AUTHORS.

A RARE species, perhaps only to be met with in the Royal Gardens, Kew.

A deciduous warm greenhouse Fern.

Native of Guatemala.

Introduced into England by Messrs. Loddiges some years ago, and the notice of botanists drawn to it by Mr. J. Henderson, of Wentworth.

Fronds ample, pinnate, membranaceo-herbaceous. Pinnæ

, and slightly glaucous; lower pinnæ petiolate; upper
iæ sessile and adnate; all unequal at the base, hence its
at
] drooping, oblong-ovate in form.

The lower pinnæ of Mr. Henderson's fronds ten inches long by one inch and a half broad, lanceolate in form, attenuated the apex, and also narrowed at the base, where they are equally developed, the limina on the anterior side being tinued down the petiole beyond that on the posterior side. næ in centre of frond sessile.

ber pinnæ six inches long and one inch and a quarter adnate-decurrent. Terminal pinnæ mostly somewhat and being unequal at the base. Margin of the pinnæ crenulate.

Length of frond thirty-six to fifty-four inches; colour pale green.

Stipes smooth, and pale green in colour.

Rhizoma stout, covered with scales, and growing in a branching tufted manner.

Fronds annual, and articulated on the rhizoma.

Sori uniserial, large, circular in form, and situated near the costa or midrib. Sometimes formed on the apex of a veinlet within a costal areole, and at other times exterior to this areole, and also at the junction of two or more veins.

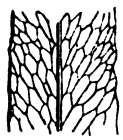
My obligations are due to Mr. Henderson, of Wentworth, and Mr. Thomas Moore, Curator of the Chelsea Botanic Gardens, for fronds of the *Polypodium inæquale*.

It does not appear included in any other of the Nurserymen's Catalogues, excepting Mr. R. Sim, of Foot's Cray.

The illustration is from a frond sent by Mr. Henderson, of Wentworth.

POLYPODIUM ATTENUATUM. P. SQUAMULOSUM.

XXIX—Vol. 2.



Portion of mature Frond—upper side.

POLYPODIUM ATTENUATUM.

R. BROWN, (*not* HOOKER, KUNZE, WILLDENOW, HUMBOLDT, PRESL, *or* SIEBER.

PLATE XXIX.—A. VOL. II.

Dictymia attenuata,	J. SMITH. MOORE & HOULSTON.
Dictyopteris "	PRESL. MOORE, (*not of* HOOKER.)
Drynaria Browniana,	FEE.
Polypodium Brownianum,	SPRENGEL. KUNZE.

Polypodium—Polypody. *Attenuatum*—Diminished.

IN THE SECTION DICTYMIA OF AUTHORS.

A VERY pretty Fern, with contiguous, simple, linear, smooth, opaque fronds.

An evergreen greenhouse species.

Native of Australia and New Holland.

Introduced into England in the year 1823, and into the Royal Gardens, Kew, in 1828, by Mr. A. Cunningham.

Fronds simple, linear-acuminate, attenuated at the base, coriaceous, lateral, articulated on a creeping rhizoma.

Length of frond twelve inches; colour dark green.

Sori immersed, uniserial, oblong, situated on the upper half of the frond.

ı internal, uniform, and articulated.
ı creeping.
nks are due to Mr. J. Smith, Curator of the Royal
Kew, for a frond of this rare Fern.
n the Catalogue of Mr. Robert Kennedy, of the
Conservatories, Covent Garden.
ıstration is from Mr. Smith's frond.

Mature Frond--upper side.

POLYPODIUM SQUAMULOSUM.

KUNZE.

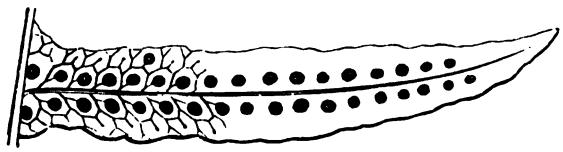
PLATE XXIX.—B. VOL. II. AND PLATE L. VOL. I.

THIS species was figured on Plate L. Vol. I., and described on page 145 of that volume. When it was described it had not fructified in England; since then Mr. Downs, of Ilfracombe, forwarded me fertile fronds; and within the last two months my own plant has put on fertile fronds. Under these circumstances it has been deemed desirable to give an illustration shewing the manner of fructification, especially as the fertile fronds are very different in form, being contracted so as to become almost linear.

The illustration is from Mr. Downs' frond.

POLYPODIUM LORICEUM.

XXX—Vol. 2.



Pinna of mature Frond—under side.

POLYPODIUM LORICEUM.

LINNÆUS. PLUMIER. KUNZE.

PLATE XXX. VOL. II.

Goniophlebium loriceum,	J. SMITH. FEE.
Polypodium latipes,	LANGSDORFF AND FISCHER.
" "	OF GARDENS.
" *ramosum,*	OF GARDENS.
Marginaria loricea,	PRESL.

Polypodium—Polypody. *Loriceum*—Breast-plated.

IN THE SECTION GONIOPHLEBIUM OF AUTHORS.

THE present species is an interesting Fern, whose abundant creeping rhizomas are beautifully snake-like spotted. It is very suitable for suspension in an open basket, requiring very little soil.

A stove species.

Native of Tropical America.

Fronds glabrous, pinnatifid, slender, and pendulous, and narrowing to a point; lateral, articulated on a green creeping very much branched rhizoma, which is dotted over with brown circular scales, giving a snake-like appearance.

Pinnules membranous, linear-oblong.

Length of frond from twelve to thirty inches; colour dull green.

Sori circular, biserial, yet mostly uniserial, about twenty pairs on each segment when uniserial.

A large plant in my collection has fronds thirty inches in length; the stipes is eight inches in length, and the largest pinnæ five inches and a quarter long.

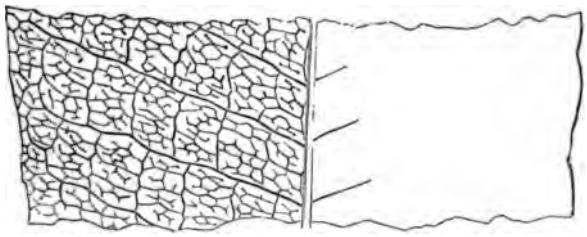
My thanks are due to M. Schott, Director of the Imperial Gardens of Vienna; Mr. Thomas Moore, the Curator of the Chelsea Botanic Gardens; Mr. Stratton, the Curator of the Cambridge Botanic Gardens; Mr. R. Sim, of Foot's Cray; and Messrs. Booth, of Hamburg, for plants of this species; and to M. Schott; Mr. Henderson, of Wentworth; and to Mr. Norman, of Hull, for fronds.

It is in the Catalogues of Messrs. James Veitch, Jun., of Chelsea; R. Sim, of Foot's Cray; Booth and Son, of Hamburg; and Edwin Cooling, of Derby.

The illustration is from a plant in my own collection.

POLYPODIUM MUSÆFOLIUM.

XXXI-Vol. 2.



Portion of mature Frond—upper side.

POLYPODIUM MUSÆFOLIUM.

BLUME.

PLATE XXXI. VOL. II.

Drynaria musæfolium,	J. SMITH.
Polypodium microsorum,	METTEN.
Acrostichum alatum,	OF SOME CONTINENTAL GARDENS.

Polypodium—Polypody. *Musæfolium*—.....?

IN THE SECTION DRYNARIA OF AUTHORS.

AN exceedingly beautiful Fern, rendered very handsome by the variegation of the fronds.

An evergreen stove Fern.

Native of the Malayan Archipelago.

Fronds mostly simple, with divided apices, occasionally pinnatifid and crowded together.

Scales near the base of the frond, which become shed when mature.

Length of frond fifteen inches, breadth two inches and a quarter, being broadest two-thirds from the bottom; colour pale green, with a profusion of dark reticulated veins, ending

pale green, with a profusion of dark reticulated veins, ending before reaching the margin of the frond. Occasionally pinnatifid fronds. Scarcely any stipes.

Near the base of the frond scales, most of which become shed in mature fronds.

Rhizoma creeping.

This *Polypodium* is yet a rare Fern, and, I believe, has not fructified in this country. It is somewhat similar to that of *P. irioides*.

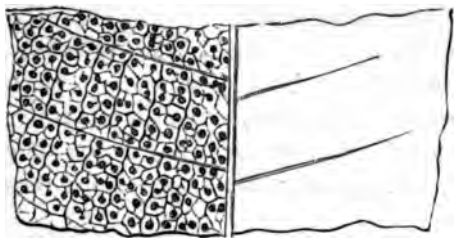
A plant of the present species I received from Messrs. Booth, of Hamburg, under the name of *Acrostichum alatum*.

It is to be procured of Messrs. Booth and Sons, of Hamburg, and of Mr. R. Sim, of Foot's Cray.

The illustration is from a plant in my own collection.

POLYPODIUM MORBILLOSUM.

XXXII—Vol. 2.



Portion of mature Frond—under side.

POLYPODIUM MORBILLOSUM.

PRESL. KUNZE. SPRENGEL.

PLATE XXXII. VOL. II.

Drynaria morbillosa,	J. SMITH.
Phymatodes "	PRESL.
Polypodium quercifolium,	OF SOME CONTINENTAL GARDENS, (*not of* LINNÆUS.)
Polypodium heracleifolium,	OF CONTINENTAL GARDENS.
Drynaria coronans,	OF GARDENS, (*not of* SMITH *or* FEE.)
Polypodium "	OF GARDENS, (*not of* WALLICH.)
Phymatodes "	OF GARDENS, *not of* PRESL.)

Polypodium—Polypody. *Morbillosum*—.....?

IN THE SECTION DRYNARIA OF AUTHORS.

A LARGE-GROWING magnificent species, well worth being cultivated by every Fern grower. It is very different from other species, and indeed has a character of its own, which renders it a doubly interesting Fern. It grows somewhat in the form of a crown.

A stove evergreen species.

Native of the Malayan Archipelago, and Java.(?)

of frond ovate, deeply pinnatifid, membranaceous; the ents alternate, oblong-lanceolate in form, and acute.

ns small and reticulated.

ri minute, immersed between the venules; biserial, and covering the whole frond. Upper surface of frond covered minute, white pubescence. Midrib of frond crowded with wn hairs, especially near the base, where they are long.

Veins green, except near the base, where they are reddish wn.

zoma creeping, densely scaly, and whitish near the me end.

gth of frond from three to four feet; colour light green. ance of the frond stiff.

The present species has been confused with another very similar Fern, the *Polypodium coronans* of Wallich, to be hereafter described.

For plants my thanks are due to Messrs. Rollisson, of Tooting, and Booth, of Hamburg; and for fronds to Mr. Henderson, of Wentworth; Messrs Booth, of Hamburg; and Mr. Norman, of Hull.

At may be procured, although an uncommon and rather expensive species, from Messrs. Rollisson, of Tooting; R. Sim, of Foot's Cray; E. G. Henderson, of the Wellington Nursery; Veitch, Jun., of Chelsea; A. Henderson, of Pine-apple Place; Kennedy, of Covent Garden; and Booth, of Hamburg.

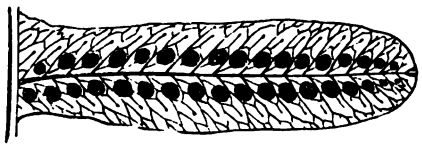
The illustration is from a plant in my own collection.

POLYPODIUM GLAUCUM.

XXXIII-VOL. 2.

POLYPODIUM GLAUCUM.

XXXIII—VOL. 2.



Pinna of mature Frond—under side.

POLYPODIUM GLAUCUM.

RADDI, (*not of* SWARTZ.)

PLATE XXXIII. VOL. II.

Goniophlebium Glaucum, J. SMITH.

Polypodium—Polypody. *Glaucum*—Sea-green.

IN THE SECTION GONIOPHLEBIUM OF AUTHORS.

A HANDSOME dwarf Fern, of easy cultivation.

An evergreen stove species.

Native of Brazil.

Fronds glabrous, broadly lanceolate, pinnatifid, pinnules oblong-obtuse, with blunt rounded apices; pinnules opposite; frond smooth, bluish green in colour; veins forked and anastomosing angularly.

Rhizoma creeping, covered with brown scales, which are darker in colour and narrower than in *Polypodium latipes,* nor do they lie flat along the rhizoma as in that species.

Sori uniserial.

Rhizoma branched.

Length of frond twelve inches.

This species grows best when planted with the creeping

above the soil; in its native habitats it grows in
it the base of trees.
plant and fronds of this Fern I am indebted to Mr.
Henderson, of Wentworth.
in the Catalogues of Messrs. Rollisson, of Tooting;
ers, of Canterbury; and Stansfield, of Todmorden.
illustration is from a plant in my own collection.

Portion of Pinna of mature Frond—under side.

POLYPODIUM DREPANUM.

LOWE.

PLATE XXXIV. VOL. II.

Polystichum drepanum,	PRESL. MOORE AND HOULSTON.
" "	SMITH.
Aspidium "	SWARTZ. SCHKUHR.
Phegopteris "	J. SMITH.

Polypodium—Polypody. *Drepanum*—Sickle.

THE *Polypodium drepanum* is so exactly like a *Polystichum* in its habit and general appearance, that botanists have been induced to place it among those species, on the authority of Swartz, that it has an indusium, which is cordate-subrotund in form, and very minute. However the Rev. W. W. Spicer has studied it in its own country, growing wild; and Mr. Joseph Henderson, of Wentworth, has also carefully examined cultivated plants, and both these gentlemen have failed to discover an indusium. Mr. Smith, of the Royal Gardens, Kew, in his

recent "Catalogue of Ferns," places it amongst the *Polypodium* tribe, in the section *Phegopteris*. It has therefore been considered advisable to follow the latter authority, especially as a careful examination has also convinced the author that the spore cases are naked.

The present species is a noble Fern, with very bold, large fructification, and capable of being made a fine exhibition plant.

An evergreen greenhouse species.

Native of Madeira.

Cultivated in the Royal Gardens, Kew, in 1822.

For a plant of this species I am indebted to Mr. R. Sim, of Foot's Cray; and for splendid fronds to Mr. J. Henderson, of Wentworth.

It is in the Catalogues of Messrs. Sim, of Foot's Cray; Veitch, of Chelsea; E. G. Henderson, of St. John's Wood; and A. Henderson, of Pine-apple Place.

The illustration is from a frond sent by Mr. J. Henderson.

POLYPODIUM DISSIMILE.

XXXV—Vol. 5.

Pinna of mature Frond—under side.

POLYPODIUM DISSIMILE.

KUNZE. LINNÆUS. SPRENGEL, (*not of* SCHKUHR.)

PLATE XXXV. VOL. II.

Goniophlebium dissimile, J. SMITH MOORE AND HOULSTON.

Polypodium—Polypody. *Dissimile*—Unlike.

IN THE SECTION GONIOPHLEBIUM OF AUTHORS.

THIS pretty rare Fern is a very dissimilar species to any other of the section *Goniophlebium*, in which it has very properly being placed by Mr. Smith. Although scarcely yet known amongst Fern-growers, still it is a very desirable plant.

An evergreen stove Fern.

Native of Jamaica and Brazil.

Fronds slender, pendulous, pubescent, articulated on a scaly creeping rhizoma. Fronds lanceolate in form, pinnate, pinnæ being distant, sessile, subfalcate, lanceolate-acuminate, membranous, undulated, and in a slight degree deflexed, the lower ones standing forward.

Sori biserial.

Length of frond from twenty-four to thirty-six inches; colour pale yellowish green.

Introduced into England in the year 1820.

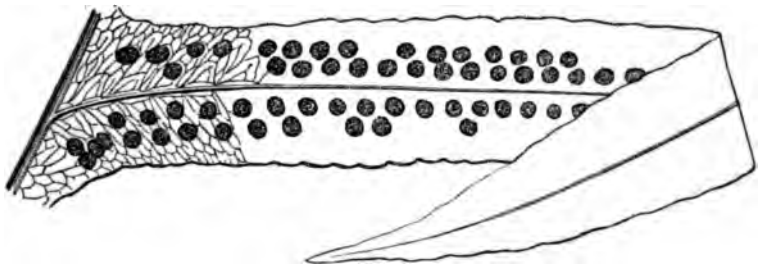
For fronds of this species I am indebted to Mr. T. Moore, of the Chelsea Botanic Gardens.

It does not appear to be contained in any of the Nurserymen's Catalogues.

The illustration is from Mr. T. Moore's frond.

POLYPODIUM [illegible]

XXXVI—Vol. [illegible]



Pinna of mature Frond—under side.

POLYPODIUM DICTYOCALLIS.

LOWE.

PLATE XXXVI. VOL. II.

Phlebodium dictyocallis,	J. SMITH.
" *multiseriale,*	T. MOORE.
Chrysopteris dictyocallis,	FEE.

Polypodium—Polypody. *Dictyocallis*—Beautiful-netted.

IN THE SECTION PHLEBODIUM OF AUTHORS.

ANOTHER species in the way of *Polypodium aureum,* scarcely yet known amongst cultivators of Ferns.

An evergreen stove species.

Native of Tropical America and Demerara.

Introduced into the Royal Gardens, Kew, in 1850.

Fronds ample, sub-pinnate, glabrous; segments broad, lanceolate-acuminate; base spread out, entire.

Rhizoma shaggy, with pale brown scales. Sinus narrow and rounded.

Sori in several series on either side the midvein.

Length of frond from twenty-four to forty-eight inches; segments eight to ten inches long, and nearly two inches broad; colour pale green, *not glaucous*.

It differs from *P. aureum* in having broader segments, in not being glaucous, and in not having the broad oblique sinus of that species.

For fronds of *P. dictyocallis* I am indebted to Mr. T. Moore, of the Chelsea Botanic Gardens.

It may be procured of Mr. R. Sim, of Foot's Cray.

The illustration is from a frond sent by Mr. Thomas Moore.

POLYPODIUM RIGIDUM. P. HENDERSONI.

XXXVII-Vol. 2.

Portion of mature Frond—under side.

POLYPODIUM RIGIDUM.

LOWE, (*not of* HOFFMANN, *nor of* HOOKER AND GREVILLE.)

PLATE XXXVII.—A. VOL. II.

Campyloneuron rigidum, J. SMITH.

Polypodium—Polypody. *Rigidum*—Rigid.

IN THE SECTION CYRTOPHLEBIUM OF AUTHORS.

A STOUT-FRONDED rare species, well deserving a place in every collection. The fronds are so thick that they will scarcely bend without breaking.

An evergreen stove Fern.

Native of Tropical America.

The fronds, which are contiguous and simple, are stipitate, linear-lanceolate in form, having an attenuated base and a pointed apex.

The fronds, which grow erect, are in texture very thick, coriaceous, smooth, and polished, having the margin thickened.

Veins immersed, and difficult to see, darker than the frond, and having club-shaped apices. Rachis almost buried within the frond, perfectly flat above, and scarcely raised beneath.

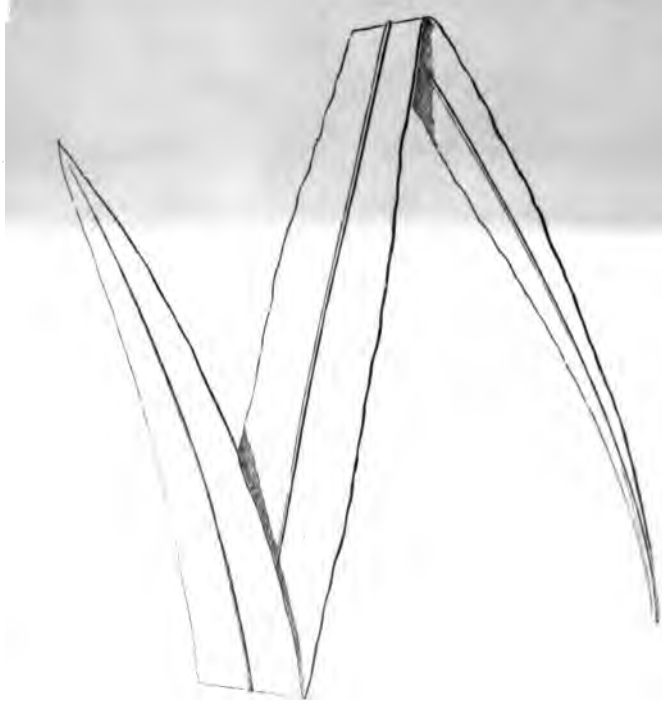
egular, at first diminute and whitish, becoming gradually
d at length, when mature, bold and reddish brown
ır.

of frond from twelve to fifteen inches; width three-
of an inch; colour rich dark green, paler beneath.
ne inch and a half in length.

thanks are due to Messrs. Rollisson, of Tooting, and
nderson, of Pine-apple Place, for plants of this species;
o M. Schott, of the Imperial Gardens of Vienna; Mr.
Smith, of the Royal Gardens, Kew; and Mr. T. Moore,
he Chelsea Botanic Gardens, for fronds.

can be procured from Mr. R. Sim, of Foot's Cray;
essrs. A. Henderson, of Pine-apple Place; and Messrs. Rollis-
on, of Tooting.

The illustration is from a plant in my own collection.



Barren Frond of P. angustifolium. (See next page.)

Portion of mature Frond—under side.

POLYPODIUM HENDERSONI.

LOWE.

PLATE XXXVII.—B. VOL. II.

Polypodium—Polypody. *Hendersoni*—Named after Mr. Joseph Henderson, of Wentworth.

IN THE SECTION CYRTOPHLEBIUM OF AUTHORS.

THE present Fern is a very distinct species, and although approaching nearest to *Polypodium augustifolium* of Swartz, which is figured in Vol. I, Plate XLVIII, nevertheless it is strikingly dissimilar from that species.

The habit of the plant is more erect, the colour of the fronds paler, and although narrower than *P. angustifolium*, still they scarcely curl round along the edges, as is most frequently the case with that species. The barren fronds are the same size and form as the fertile fronds, whilst in *P. angustifolium*, the barren frond is three times as broad, and quite dissimilar from those that are fertile. (See engraving on page 80.)

In searching the different works upon Ferns, I have been unable to recognise the present Fern as one hitherto described, and have therefore ventured to name it *P. Hendersoni*.

Mr. Joseph Henderson, of Wentworth, has several splendid specimens of this Fern.

Fronds glabrous, simple, linear, erect; margin slightly revolute, coriaceous, sessile, being decurrent within an inch of the rhizoma, and then terminating with a thickened edge to the stipes, but sometimes decurrent quite to the rhizoma; apex and base attenuated gradually; veins hid; fronds nearly all fertile.

Length of frond thirteen inches; width scarcely a quarter of an inch; colour yellowish green.

Rhizoma scaly; veins immersed, and difficult to see, yet there is no doubt that it belongs to the section *Cyrtophlebium*, (*Campyloneuron* of Smith.)

Sori medial, uniserial, from one hundred to one hundred and twenty pairs of sori on each frond, smaller than in *P. angustifolium*, and never biserial or irregular as in that species.

The present Fern differs from *P. angustifolium* also in being much narrower, more rigid, more sharply attenuated towards the apex, more contiguous, straight, shorter, and more compact, in not having the comparatively broad barren frond of that species, and in being erect and uniserial.

An evergreen stove Fern, cultivated by Mr. J. Henderson, of Wentworth, but where from not known.

I am indebted to Mr. Joseph Henderson, of Wentworth, for a plant and fronds of this species.

It is not in any of the Nurserymen's Catalogues.

The illustration is from a frond sent by Mr. J. Henderson.

Mature Plant—upper side.

POLYPODIUM FILIPES.

LOWE.

PLATE XXXVIII. VOL. II.

Arthropteris filipes, MOORE. J. SMITH.

Polypodium—Polypody. *Filipes*—Thread-footed.

A SINGULAR, very dwarf, creeping species, only recently introduced into our collections, having been described, in 1855, by Mr. T. Moore, of the Chelsea Botanic Gardens.

An evergreen greenhouse species.

Native of New Zealand.

Fronds, simple, elliptic, lanceolate, or oblong-ovate, with a small lobe or two at the base, often pinnate, with two or three pairs of diminutive oblong-obtuse pinnæ, and a terminal lanceolate-acuminate one much larger; obscurely crenate, and in a slight degree hairy on the veins beneath.

Rachis and stipes covered with short hairs.

Rhizoma exceedingly slender, filiform, covered with lance-shaped fuscous scales.

Veins forked once or twice, and terminate within the margin in club-shaped heads.

Sori submarginal.

Length of frond from two to four inches; colour dull green.

This species was imported by Messrs. A. Henderson, of Pine-apple Place.

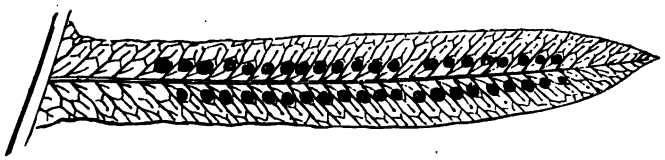
For fronds I am indebted to Mr. Thomas Moore, of the Botanic Gardens, Chelsea.

It is in the Catalogues of Mr. R. Sim, of Foot's Cray; Messrs. A. Henderson, of Pine-apple Place; and Messrs. E. G. Henderson, of St. John's Wood.

The illustration is from fronds sent by Mr. T. Moore.

POLYPODIUM LATIFER.

XXXIX—Vol. 2.



Pinna of mature Frond—under side.

POLYPODIUM LATIPES.

LANGSDORFF AND FISCHER. KUNZE. LINK.

PLATE XXXIX. VOL. II.

Goniophlebium latipes, J. SMITH. MOORE AND HOULSTON.
Marginaria latipes, PRESL.

Polypodium—Polypody. *Latipes*—Broad-footed.

. IN THE SECTION GONIOPHLEBIUM OF AUTHORS.

THERE are a number of Ferns very similar to each other as garden plants, although, botanically speaking, distinct. Of these we have figured and described *Polypodium Catharinæ*, *P. vacillans* and *P. harpeodes*. There seems to be a little confusion amongst botanists as regards these species, and perhaps the present Fern may not be distinct from *P. Catharinæ*.

An evergreen stove Fern.

Native of Brazil and St. Catharine.

Fronds pinnatifid, alternate, glabrous, somewhat slender and pendulous, and in this respect differs from the species above referred to; lateral, and articulated on a green, creeping rhizoma, covered with peltate, fimbriated, brown scales; pinnules linear-oblong, membranous, somewhat obtuse, undulated, and repand.

Sori small and biserial; yellowish in colour.

Length of frond from twelve to twenty-four inches; colour dull green.

Introduced into the Royal Gardens, Kew, by Messrs. Loddiges, in 1841.

My thanks are due to Mr. Thomas Moore, of the Botanic Gardens, Chelsea, for plants and fronds of this Fern.

In the Catalogues of Messrs. A. Henderson, of Pine-apple Place; Stansfield, of Todmorden; and Kennedy, of Covent Garden, but perhaps not the true species.

The illustration is from a plant in my own collection.

Pinna of mature Frond—under side.

POLYPODIUM KARWINSKIANUM.

A. BRAUN. J. SMITH. KUNZE.

PLATE XI.. VOL. II.

Polypodium—Polypody. *Karwinskianum*—Named after Karwinski.

AN interesting newly-introduced species, not unlike the *Polypodium vulgare* of Great Britain.

An evergreen stove Fern.

Native of Mexico and Guatemala.

The fronds are pinnate, oblong-lanceolate in form; pinnæ oblong obtuse, and dilated at the bsse upwards. Veins twice forked and free.

Length of stipes from two to three inches, sparingly scaly when young.

Rhizoma short, creeping, and covered with dark brown scales.

Length of frond from six to eight inches; colour dark green.

Sori uniserial, medial, and of medium size.

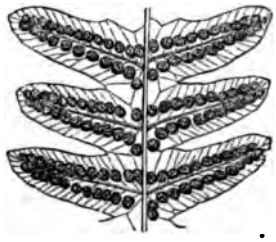
For fronds of this Fern I am indebted to Mr. J. Smith, of the Royal Gardens, Kew, and Mr. J. Henderson, of Wentworth.

It is in the Catalogues of Messrs. A. Henderson, of Pineapple Place, and Young, of Taunton.

The illustration is from a frond sent by Mr. J. Henderson.

POLYPODIUM SCOLOPENDROIDES. P. SIMPLEX.

XLI.—Vol. 2.



Portion of fertile Frond—under side.

POLYPODIUM SCOLOPENDROIDES.

LINNÆUS. SWARTZ. PLUMIER. HOOKER AND GREVILLE. KUNZE. PETIVER. PLUKENET. SPRENGEL.?

PLATE XLI.—A. VOL. II.

Polypodium Domingense,	SPRENGEL.
Goniopteris scolopendroides,	PRESL. SMITH. FEE.
" *subpinnata,*	OF GARDENS.
Polypodium comptoniæfolium,	DESVAUX.?

Polypodium—Polypody. *Scolopendroides*—Scolopendrium-like.

IN THE SECTION GONIOPTERIS OF AUTHORS.

A BEAUTIFUL dwarf Fern, with compact habit, and flat shining fronds; easily cultivated, readily raised from spores, yet uncommon in collections.

An evergreen stove Fern.

Native of Jamaica and the West Indies.

Introduced into England in 1824.

Fronds pinnatifid, except near the base, where they are pinnate; linear-lanceolate in form; apex of the frond acuminate; apex of the segments rounded; the segments often dissimilar in

size and form. Fronds growing horizontally from an erect very scaly rhizoma. The scales dark brown in colour. Margin of frond and under side of all the veins covered with a copious minute white pubescence.

Veins usually simple, occasionally forked, and always anastomosing next the midrib.

Sori large, conspicuous, copious, eventually confluent; biserial.

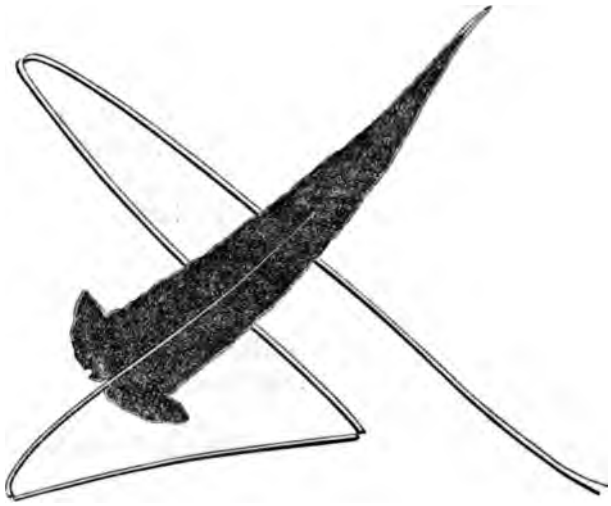
Length of frond about nine inches; width three-quarters of an inch; colour bright shining green. Fronds only naked for the length of half an inch.

Mr. Cooling, of Derby, has raised a number of plants from spores, which are undoubtedly the true *Polypodium scolopendroides*.

My thanks are due to Mr. J. Smith, Curator of the Royal Gardens, Kew, and to Mr. Joseph Henderson, of Wentworth, for fronds of this species.

It does not appear to be in any Fern list excepting Mr. E. Cooling's, of Derby.

The illustration is from Mr. J. Smith's frond.



Fertile Frond—under side, shewing the sori confluent.

POLYPODIUM SIMPLEX.

PLATE XLI.—B. VOL. II.

Meniscium simplex, HOOKER. SMITH. MOORE AND HOULSTON.

Polypodium—Polypody. *Simplex*—Simple.

IN THE SECTION MENISCIUM OF AUTHORS.

A PRETTY scarce Fern, of dwarf habit.

An evergreen stove Fern.

Native of China, (from Hong-kong.)

Introduced into the Kew Gardens in the year 1850.

Barren and fertile fronds different; the fertile frond being contracted, and more acuminate than the barren frond.

The fronds, which are simple, are pubescent; they are of a somewhat oblong-acuminate form, having a dentate-serrate

edge; cordate at the base, and subhastate. Lateral, being adherent to a scaly creeping rhizoma.

Sori linear, medial, in some degree transverse, arcuate, and continued across the junction of two anastomosing venules; eventually confluent. Colour brown.

Veins pinnate, curved, and almost parallel; conspicuous, dividing the frond into a multitude of rectilinear parallelograms.

Length of fronds from six to twelve inches; colour a dull green.

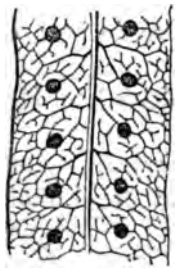
For fronds I am indebted to Sir W. J. Hooker, Director of the Royal Gardens, Kew; Mr. J. Smith, Curator of the Royal Gardens, Kew; and to Mr. R. Sim, of Foot's Cray.

It may be procured of Mr. R. Sim, of Foot's Cray, and Messrs. Booth, of Hamburg.

The illustration is from a barren frond forwarded by Mr. J. Smith, of Kew.

POLYPODIUM PELTIDEUM.

XLII.—Vol. I.



Portion of mature Frond—under side.

POLYPODIUM PELTIDEUM.

KUNZE.

PLATE XLII. VOL. II.

Phymatodes peltidea,	J. SMITH.
Chrysopteris "	LINK.
Polypodium phymatodes,	SCHKUHR, *(not of* LINNÆUS.)
Pleopeltis latifolia,	LODDIGES.
Drynaria "	FEE. ?

Polypodium—Polypody. *Peltideum*—Target-like.

IN THE SECTION DRYNARIA OF AUTHORS.

ANOTHER interesting *Drynaria,* with bright shining fronds.
An evergreen stove species.
Native of the East Indies.
Introduced into England in 1823.

Fronds pinnatifid, somewhat cuneate in form. Segments narrowing to the apex, but not sharp-pointed. The stipes and rachis reddish brown. In a frond twelve inches in length, seven and a half inches are naked. Midrib of veins green.

Sori uniserial, spread throughout the frond, raising umbones on the upper surface, nearly circular; about eighteen pairs on each segment.

Length of frond twelve inches; colour rich green, shining and polished.

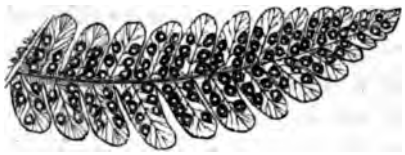
For a frond I am indebted to Mr. J. Smith, Curator of the Royal Gardens, Kew.

It is not in any Nurseryman's Catalogue.

The illustration is from Mr. J. Smith's frond.

POLYPODIUM SPECTABILE.—PINNA.

XLIII.—VOL. I.



Portion of Pinna of mature Frond—under side.

POLYPODIUM SPECTABILE.

SPRENGEL. KAULFUSS, (*not of* WILLDENOW.)

PLATE XLIII. VOL. II.

Phegopteris spectabilis,	FEE. J. SMITH.
Polypodium extensum,	PRESL.
" *hirtum,*	PRESL.
" *microdonton,*	DESVAUX.
" *Species No. XII. Paris,*	SCHOTT, M.S.

Polypodium—Polypody. *Spectabile*—Graceful.

IN THE SECTION PHEGOPTERIS OF AUTHORS.

THE *Polypodium spectabile* is a noble Fern when well grown; it is, however, only to be found in the larger collections.

An evergreen stove Fern.

Native of Tropical America and Chili.

Fronds bipinnate or sub-tripinnate, triangular in form, very hairy. Pinnules alternate, lanceolate, pinnate at the base, and profoundly pinnatifid above; apices denticulate. The divisional parts are frequently so close together that the fronds almost seem to be entire.

Stipes and rachis covered with a minute pubescence, and lanceolate scales.

Sori between the costa and the margin. Uniserial, situated at the apex of a free veinlet.

Length of frond from twenty-four to thirty-six inches; width from nine to twelve inches; colour dull green. Veins forked, and covered with a dense pubescence.

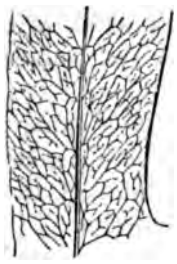
For a plant I am indebted to M. Schott, Director of the Imperial Gardens of Vienna; and for a frond to Mr. R. Sim, of Foot's Cray.

It can only be procured of Mr. R. Sim, of Foot's Cray.

The illustration is from a plant in my own collection.

POLYPODIUM TERMINALE.

XLIV—Vol. I.



Portion of Pinna of mature Frond—upper side.

POLYPODIUM TERMINALE.

SPRENGEL. LINK. KUNZE.

PLATE XLIV. VOL. II.

Phymatodes terminale,	J. SMITH.
Chrysopteris "	LINK.

Polypodium—Polypody. *Terminale*—Terminal.

IN THE SECTION DRYNARIA OF AUTHORS.

A VERY dissimilar species to the other Ferns of the section *Drynaria.*

An evergreen stove Fern.

Native of the East Indies.

Fronds pinnate below, pinnatifid above, and triangularly-ovate in form; veins and midrib of frond ebeneous; veins internal, scarcely visible, compound anastomosing, and have club-headed apices. Destitute of scales, except near the rhizoma.

Length of frond twenty-one inches, of which one-half is naked; the width is less than it otherwise would be, owing to the pinnæ near the base being more or less parallel with the

rachis, in the widest part only ten inches, although the longest pinnæ are six inches and a half, which, if placed at right angles to the stipes, would give a width of thirteen inches.

Sori naked, more or less oval, uniserial, and formed near the apices of the frond.

Segments sharp pointed, five pairs, and an ultimate one.

Colour of frond bright shining green.

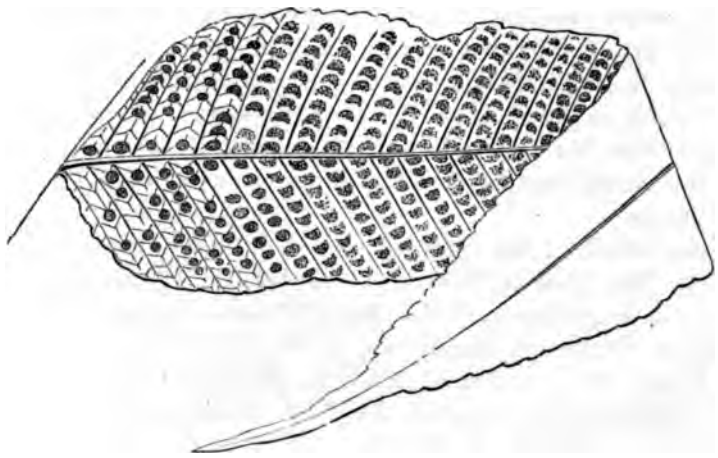
I am indebted to Mr. J. Smith, Curator of the Royal Gardens, Kew, for a frond of this species.

It is not in any of the Nurserymen's Catalogues.

The illustration is from a frond forwarded by Mr. Smith.

POLYPODIUM PALUSTRE.

XLV—Vol. I.



Pinna of mature Frond—under side.

POLYPODIUM PALUSTRE.

PLATE XLV. VOL. II.

Meniscium palustre,	RADDI. HOOKER. BAUER.
" "	J. SMITH. KUNZE. FEE.
" *dentatum,*	PRESL.
" *serratum,*	CAVANILLES. SPRENGEL.

Polypodium—Polypody. *Palustre*—Marsh.

IN THE SECTION MENISCIUM OF AUTHORS.

WHEN successfully cultivated and bearing fertile fronds, this species is a noble Fern. The lines of sori are a conspicuous feature.

An evergreen stove species.

Native of Brazil, American Meridian, and Philippine Islands.

Fronds glabrous, pinnate; pinnæ entire, lanceolate-acuminate

in form, coriaceous, rounded at the base, the lower pairs frequently proliferous at the base of the pinnæ. Lateral, adherent to a stout, creeping rhizoma. Stipes dark coloured near the base. Habit somewhat erect. Veins pinnate and curved.

Sori linear, medial, arcuate, eventually confluent.

Length of frond from thirty-six to sixty inches; length of pinnæ from six to ten inches; colour a lively green.

Introduced into the Royal Gardens, Kew, in 1837, by Messrs. Loddiges.

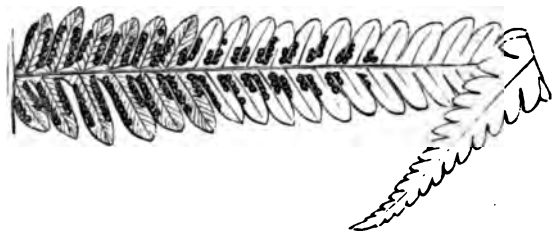
For fronds I am indebted to Mr. J. Smith, Royal Gardens, Kew; Mr. Thomas Moore, of the Botanic Gardens, Chelsea; Mr. Clarke, Curator of the Royal Botanic Gardens, Glasgow; and to Mr. Joseph Henderson, of Wentworth.

It may be procured of Mr. Sim, of Foot's Cray; Messrs. E. G. Henderson, of St. John's Wood; A. Henderson, of Pine-apple Place; and Veitch, of Chelsea.

The illustration is from a frond forwarded by Mr. Clarke, of Glasgow.

POLYPODIUM CONCINNUM.

XLVI.—Vol. 2.



Pinna of mature Frond—under side.

POLYPODIUM CONCINNUM.

WILLDENOW. KUNZE. SCHLECHTENDAL. LINNÆUS. LINK. LIEBMANN. PRESL. SWARTZ. SPRENGEL.

PLATE XLVI. VOL. II.

Lastrea concinna,	OF GARDENS.
" *contermina,*	OF GARDENS.
Aspidium concinnum,	LINK.
" *conterminum,*	WILLDENOW.
Phegopteris concinna,	FEE.

Polypodium—Polypody. *Concinnum*—Neat.

NATIVE of Mexico, Chili, and Brazil. In the hot and warm-temperate forest regions on the east side of Mexico. Schiede found it at Jalapa and Misantla; Liebmann gathered it around Mirador.

Fronds bipinnate. Segments almost triangular throughout the frond, decrescent.

Rachis and stipes pubescent.

Length of frond usually from twelve to twenty-four inches. Liebmann has specimens forty-eight inches in length. Colour rich green.

There is a divided opinion as to whether the present specie belongs to *Aspidium* or *Polypodium*. Some authors think th they have seen an indusium, and others have failed to trac the slightest approach to one. In general appearance it bear a striking resemblance to some species of *Aspidiums*, an therefore as striking a dissimilarity to the chief portion of th genus *Polypodium*.

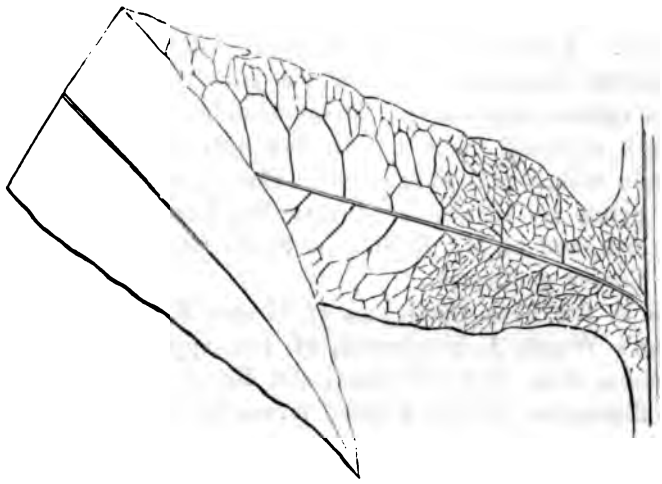
For plants I am indebted to Mr. Joseph Henderson, o Wentworth, and to Messrs. Booth, of Hamburg.

It may be procured of Mr. Sim, of Foot's Cray, and Messrs Booth, of Hamburg.

The illustration is from a plant in my own collection.

POLYPODIUM LONGISSIMUM.

XLVII-VOL. 2.



Segment of barren Frond—under side.

POLYPODIUM LONGISSIMUM.

BLUME. KUNZE.

PLATE XLVII. VOL. II.

Phymatodes longissima,	J. SMITH.
Polypodium melanoneuron,	MIQ.
" *Species No. V.*	SCHOTT, M.S.
Drynaria rubida,	J. SMITH.
Microsorium longissimum,	FEE.

Polypodium—Polypody. *Longissimum*—Very long.

Polypodium longissimum is a very singular-looking species, strikingly distinct from all others. It is by no means common. An evergreen stove Fern.

Native of the Malayan Archipelago and Java.

Fronds pinnatifid, segments alternate, except near the apex of the fronds, where opposite, width less both towards the apex and base. Linear-lanceolate; segments also linear-lanceolate. The narrow decurrent portion which joins the midrib gives the frond a curious appearance. Membranaceous.

Length of frond thirty inches, four only of which is naked. Width in widest part nine inches. Colour pale green.

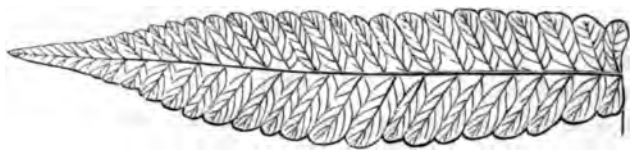
For plants my thanks are due to Mr. Joseph Henderson, of Wentworth, and to Mr. R. Sim, of Foot's Cray; and for fronds to the former gentleman.

It is in the Fern Catalogues of Messrs. E. G. Henderson, of St. John's Wood; A. Henderson, of Pine-apple Place; Veitch, of Chelsea; Sim, of Foot's Cray; and Booth, of Hamburg.

The illustration is from a frond forwarded by Mr. Henderson.

POLYPODIUM ASPRACTUM.

XLVIII—VOL. I.



Pinna of barren Frond—under side.

POLYPODIUM REFRACTUM.

FISCHER AND MEYER. KUNZE.

PLATE XLVIII. VOL. II.

Goniopteris refracta, J. SMITH.

Polypodium—Polypody. *Refractum*—Broken.

IN THE SECTION GONIOPTERIS OF AUTHORS.

A RARE species, but little known by the English Fern cultivators.

An evergreen stove Fern.

Native of Brazil.

Fronds somewhat coriaceous, glabrous. Pinnate and linear-lanceolate. Apex pinnatifid; pinnæ moderately-approximate. Fronds much acuminated. Pinnæ decurrent, from the base very unequal, auriculate on both sides. From behind the auricules upwards shortened, bended-lanceolate form, the lowest deflexed. The pinnæ pinnatifid, and sinuato-dentate; laciniæ oblong-falcate.

Sori minute and irregular.

The midrib rounded beneath, sulcate above; reddish in colour.

Stipes and rachis having moderately-acute angles; in the dri fronds the colour is a reddish-straw.

Veins forked.

Length of frond twelve inches; width in widest part s inches.

Introduced into England in 1837.

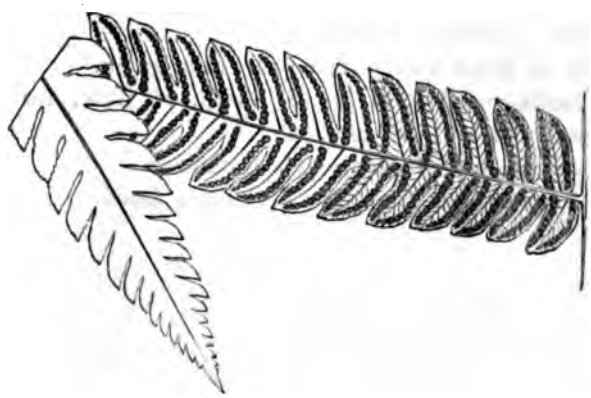
For a frond of this species my thanks are due to Mr. Smith, Curator of the Royal Gardens, Kew.

It is not in any Nurserymen's Catalogues.

The illustration is from Mr. J. Smith's frond.

POLYPODIUM SUBMARGINALIS.

XLIX—Vol. I.



Pinna of mature Frond—under side.

POLYPODIUM SUBMARGINALIS.

LANGSDORFF AND FISCHER. SPRENGEL.

PLATE XLIX. VOL. II.

Goniopteris submarginalis,	PRESL. FEE.
Phegopteris "	J. SMITH.
Polypodium caripense,	WILLDENOW. KUNZE. SIEBER.
" *distans,*	KAULFUSS.

Polypodium—Polypody. *Submarginalis*—Nearly marginal.

IN THE SECTION PHEGOPTERIS OF AUTHORS.

ANOTHER rare species rendered attractive by the line of conspicuous fructification which covers the whole frond.

An evergreen stove Fern.

Native of Brazil and Venezuela.

Fronds pinnate, linear-lanceolate in form. Pinnæ pinnatifid,

linear-lanceolate, sub-opposite; margin cuneate; apex acuminat

Stipes and rachis hirsute.

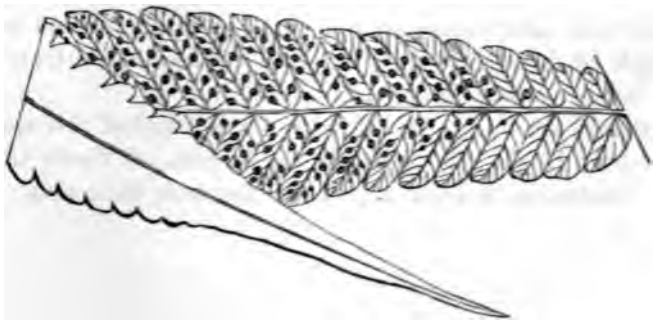
Sori uniserial, situated nearer the margin than the midrib the pinnæ; eventually confluent.

Length of frond two feet; colour rich green.

My thanks are due to Mr. J. Smith, of Kew, for the po tion of a frond sent by him.

It is not in any Nurseryman's Catalogue.

The illustration is from Mr. J. Smith's frond.



Pinna of mature Frond—under side.

POLYPODIUM AFFINE.

MARTENS AND GALLEOTTI. LEIBMANN.

PLATE L. VOL. II.

Goniopteris affinis, OF GARDENS.

Polypodium—Polypody. *Affine*—Related.

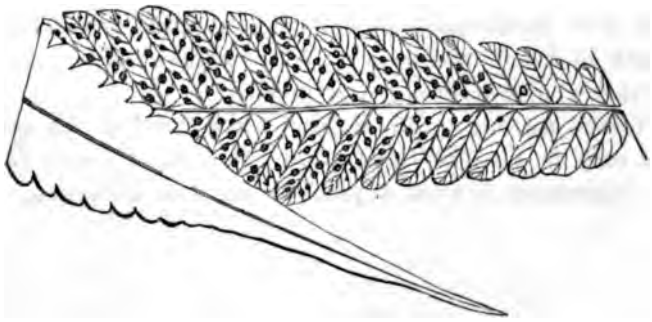
A FERN scarcely known amongst cultivators.

A greenhouse species.

Galleotti found it on the Volcano Orizaba, at an elevation of from nine to ten thousand feet, growing in oak and fir woods. Leibmann found it in the woods over Chinantha, between seven and eight hundred feet high, principally growing upon the oak trees.

A very characteristic fact which authors do not speak of, and which is especially of importance in relation to this species, is the rhizoma.

Pinnate, with three to five pairs of inch-wide divisions, with a terminal one. The divisions profoundly dentate.



Pinna of mature Frond—under side.

POLYPODIUM AFFINE.

MARTENS AND GALLEOTTI. LEIBMANN.

PLATE L. VOL. II.

Goniopteris affinis, OF GARDENS.

Polypodium—Polypody. *Affine*—Related.

A FERN scarcely known amongst cultivators.

A greenhouse species.

Galleotti found it on the Volcano Orizaba, at an elevation of from nine to ten thousand feet, growing in oak and fir woods. Leibmann found it in the woods over Chinantha, between seven and eight hundred feet high, principally growing upon the oak trees.

A very characteristic fact which authors do not speak of, and which is especially of importance in relation to this species, is the rhizoma.

Pinnate, with three to five pairs of inch-wide divisions, with a terminal one. The divisions profoundly dentate.

Habit almost erect; fronds short and broad, and somewhat crumpled.

Rhizoma horizontal and creeping, about as thick as a finger, covered with membranaceous undulated reddish pellucid scales.

Length of frond twelve to eighteen inches; width from four to six inches; colour heavy dull green.

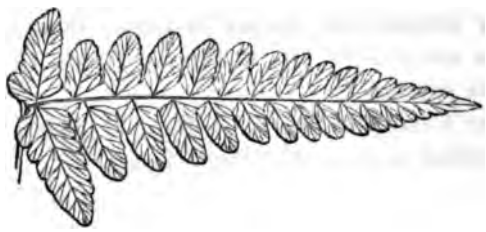
My thanks are due to Mr. R. Sim, for a frond of this species.

It is only in the Catalogue of Mr. R. Sim, of Foot's Cray.

The illustration is from a plant in my own collection.

POLYPODIUM - AUREITUM.

LI—VOL. 2.



Pinna of mature Frond—upper side.

POLYPODIUM AURITUM.

PLATE LI. VOL. II.

Phegopteris aurita,	J. SMITH.
Gymnogramme "	HOOKER.
Grammitis "	T. MOORE.

Polypodium—Polypody. *Auritum*—Eared.

IN THE SECTION PHEGOPTERIS OF AUTHORS.

A SPECIES but little known.

An evergreen stove Fern.

Native of the East Indies.

The fronds, which are pinnate, are somewhat lanceolate in form, being widest in the centre of the frond, narrowing both to the base and apex. Pinnæ pinnatifid and linear-lanceolate; apex acuminate, sub-opposite, the three lower pairs distant, the others approximate. Pinnules rounded and simple, except the basal ones in the three lowest pinnæ, which are pinnatifid, the inferior basal one is nearly twice the size of the others.

Veins pinnate, apices free and club-headed.

Stipes, rachis, veins, and margin of frond densely yet minutely hirsute.

Length of frond about sixteen inches, of which the low four inches is naked. Colour deep green, paler beneath.

Veins very conspicuous, darker in colour than the frond.

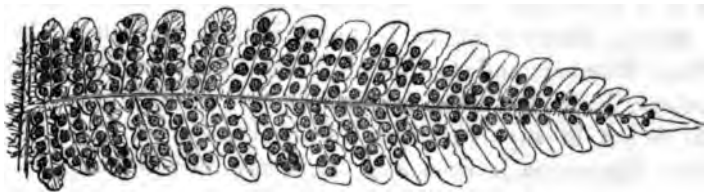
My thanks are due to Mr. R. Sim, of Foot's Cray, Kent, f fronds of this species.

It is in the Catalogue of Mr. R. Sim, of Foot's Cray.

The illustration is from Mr. Sim's frond.

POLYPODIUM AMPLUM.—TINX.

LII.—VOL. 2.



Segment of mature Frond—under side.

POLYPODIUM AMPLUM.

HUMBOLDT. SPRENGEL. PRESL. HOOKER.

PLATE LII. VOL. II.

Phegopteris ampla,	FEE. J. SMITH. PRESL.
Polypodium caripense,	KUNTH.

Polypodium—Polypody. *Amplum*—Large.

IN THE SECTION PHEGOPTERIS OF SOME AUTHORS.

Polypodium amplum is a fine exhibition plant when well grown.

It is an evergreen stove species.

Native of Martinique.

Fronds tri-pinnatifid and glabrous; segments oblong-obtuse, the margins dentato-serrate.

Stipes paleaceous.

Sori uniserial, circular, and very large—covering the whole underside of the frond.

Pinnæ linear-lanceolate and acuminate.

Veins branched.

Fronds very large.

P. amplum is deserving of a place in every collection where the more robust species are cultivated.

For a plant and fronds of this Fern my thanks are due to M. Schott, Director of the Imperial Botanic Gardens of Schonbrünn, Vienna; and to Mr. J. Smith, Curator of the Royal Gardens, Kew, for other fronds.

It is not in any Nurserymen's Catalogues.

The illustration is from a plant in my own collection.

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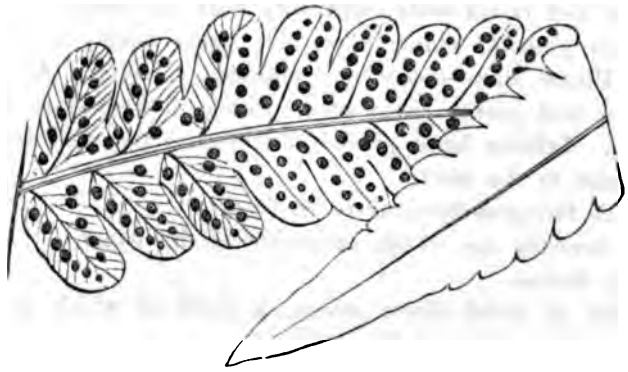
LIII—VOL. [illegible]

POLYPODIUM AGRICOLUM.
LXIV—VOL. 4



Pinna of mature Frond—under side.

POLYPODIUM FORMOSUM.

RADDI. PRESL.

PLATE LIII. VOL. II.

Phegopteris formosa,	FEE. J. SMITH.
Polypodium coreovadense,	SCHOTT, M.S.
" *grande,*	PRESL.
" *splendidum,*	KAULFUSS?
" *macropterum,*	KAULFUSS.

Polypodium—Polypody. *Formosum*—Beautiful.

IN THE SECTION PHEGOPTERIS OF SOME AUTHORS.

THIS grand Fern is very rare in cultivation; it thrives well with ordinary treatment, and is capable of being made a very handsome exhibition plant.

An evergreen stove species.

Native of Brazil.

Caudex upright, and densely covered with dark reddish brown long scales.

Stipes and rachis scaly, especially near the base.

Fronds pinnate, pinnæ pinnatifid, being deeply so near the base. Pinnæ linear-lanceolate; pinnules rounded. Apex both of frond and pinnæ acuminate. Pinnæ short-stalked and ascending. Inferior basal pinnule larger than the rest, and often split quite to the stem.

Fronds triangularly-elongate in form.

Sori covering the whole underside of the frond.

Veins forked.

Length of frond thirty inches, a third of which is naked. Colour a rich dark shining green.

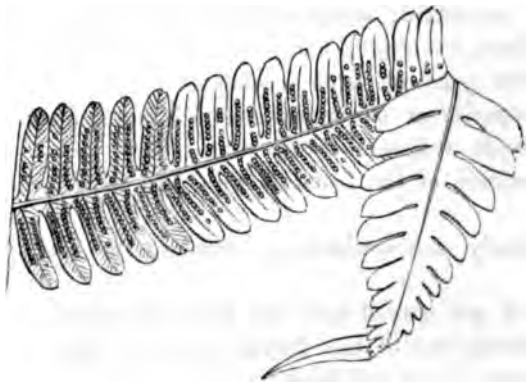
For a plant and fronds of *Polypodium formosum* I am indebted to M. Schott, Director of the Imperial Botanic Gardens of Schonbrünn, Vienna.

It is not in any of the Nurserymen's collections.

The illustration is from a plant in my own collection.

POLYPODIUM DECUSSATUM.—PORTION OF FRONDS

LAT.—VOL. 2.



Segment of mature Frond—under side.

POLYPODIUM DECUSSATUM.

LINNÆUS. PLUMIER.
KUNZE. KAULFUSS. SWARTZ. SPRENGEL.

PLATE LIV. VOL. II.

Phegopteris decussata,	J. SMITH.
Polypodium grammicum,	SPRENGEL. SIEBER. PRESL.
Glaphyropteris "	PRESL.
Lastrea stipulata,	KARST.

Polypodium—Polypody. *Decussatum*—Cross-leaved.

IN THE SECTION PHEGOPTERIS OF SOME AUTHORS.

A RARE Fern, scarcely to be seen in collections, although well known to most Botanists.

An evergreen stove species.

Native of the West Indies, the American Meridian, Martinica, and Monserrat.

[illegible] ıds large, beneath subpubescent and bipinnatifid. Stem brown at the base of the frond. Fronds sessile, elongate, and profoundly pinnatifid; segments linear-lanceolate and obtuse.

Sori in lines, eventually confluent, uniserial, minute, and from ten to twelve pairs on each segment.

Pinnæ opposite or subopposite and hirsute, apex acuminate.

Veins simple and semi-transparent.

The substance of the frond is thin, and densely but minutely pubescent.

A singularly delicate-looki[illegible] species, the sori being very minute.

It has not yet spread int[illegible] English collections, excepting the magnificent one of the [illegible] Gardens, Kew.

For a frond I am indebted to Mr. J. Smith, Curator of the Royal Gardens, Kew.

It is not in any Nurseryman's list.

The illustration is from Mr. Smith's frond.

POLYPODIUM BETÆFOLIUM.

LV—VOL. 2.

Portion of mature Frond—under side.

POLYPODIUM HASTÆFOLIUM.

SWARTZ. HOOKER AND GREVILLE. KUNZE. PRESL. FEE.

PLATE LV. VOL. II.

Phegopteris hastæfolia,	J. SMITH. PRESL.
Polypodium hastatum,	SWEET. SPRENGEL.

Polypodium—Polypody. *Hastæfolium*—Spear-leaved.

IN THE SECTION PHEGOPTERIS OF AUTHORS.

AN almost unknown Fern in English gardens, although introduced as long ago as 1820.

An evergreen stove Fern.

Native of Jamaica.

Form of the frond a lengthened ovate-lanceolate; pinnate. Pinnæ diminutive near the base. Frond widest two-thirds of the way up, and then narrowing to the apex.

Pinnæ lanceolate and pinnatifid, base auriculate both above and below.

Veins forked.

Sori large, uniserial, medial, and from ten to fourteen pairs on each pinna.

Length from six to seven inches; colour dull green.

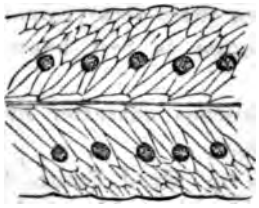
A curious dwarf species, strikingly distinct, and easily recognised by its basal segments.

POLYPODIUM SULVIBATUM.

LVI - VOL. II.

POLYPODIUM PULVINATUM.

LVI. VOL. 2.



Portion of a segment of mature Frond—under side.

POLYPODIUM PULVINATUM.

LINK. KUNZE.

PLATE LVI. VOL. II.

Phlebodium pulvinatum,	J. SMITH.
Chrysopteris pulvinata,	LINK.

Polypodium—Polypody. *Pulvinatum*—Cushioned.

IN THE SECTION PHLEBODIUM OF AUTHORS.

ANOTHER uncommon species in the section *Phlebodium* of authors.

An evergreen stove Fern.

Native of Brazil.

Introduced into the Royal Gardens, Kew, in the year 1841.

Fronds deeply pinnatifid and linear-lanceolate. Pinnæ opposite, elongate, acuminate, membranaceous, and from ten to twelve pairs.

Veins arcuately anastomosing, and with excurrent venules terminating in the areoles, and bearing sporangia on their combined apices.

Sori naked, circular, uniserial, medial, prominent, about twenty-five pairs on each segment, and orange yellow in colour.

Stipes and rachis brownish, and sunk on the superior side.

Length about two to three feet; colour pale green.

Polypodium pulvinatum is best known as the *Phlebodium pulvinatum.*

It has not that glaucous character of *Polypodium sporadocarpum*, or *P. aureum.*

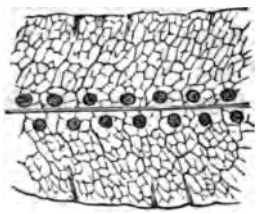
My thanks are due to Mr. J. Smith, Curator of the Royal Gardens, Kew, for a frond of this species.

It is not in any of the Nurserymen's lists.

The illustration is from Mr. Smith's frond.

POLYPODIUM PROPINQUUM.

LVII-VOL. 2.



Portion of a segment of mature Frond—under side.

POLYPODIUM PROPINQUUM.

WALLICH.

PLATE LVII. VOL. II.

Drynaria propinqua, J. SMITH.
Phymatodes propinqua, PRESL.

Polypodium—Polypody. *Propinquum*—Allied.

IN THE SECTION DRYNARIA OF AUTHORS.

AN interesting rare species, well worthy of general cultivation.

It is an evergreen stove Fern.

Native of the East Indies.

The fronds, which are deeply pinnatifid, have the segments alternate, about ten pairs and an ultimate one; margin dentate, form elongate-lanceolate, and apex acuminate.

Veins compound anastomosing, prominent, and crowded.

Sori transversely uniserial, situated near the midrib of the segments, and about twenty pairs.

Length from two to three feet; colour a dull green.

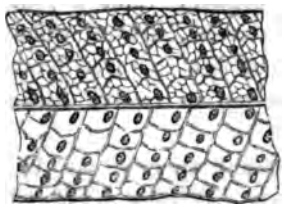
Polypodium propinquum is better known as the *Drynaria propinqua.*

It is a valuable addition to our stove Ferns. At present it is not however to be procured from our Nurserymen.

My thanks are due to Mr. J. Smith, Curator of the Royal Gardens, Kew, for a frond of this Fern.

It is not in any of the Nurserymen's lists.

The illustration is from Mr. Smith's frond.



Portion of a segment of mature Frond—under side.

POLYPODIUM CORONANS.

WALLICH.

PLATE LVIII. VOL. II.

Drynaria coronans,	J. SMITH. FEE.
Phymatodes coronans,	PRESL.

Polypodium—Polypody. *Coronans*—Crowning.

IN THE SECTION DRYNARIA OF AUTHORS.

Polypodium coronans is a magnificent species. It is very rare, being only, as far as I am aware, to be found in the collection at Kew. *P. coronans* of gardens is the *P. morbillosum* of Presl, which is figured in this volume, Plate XXXII. Although in some respects these species may be said to resemble each other, yet they are exceedingly distinct. The colour of the frond and the form and disposition of the sori is widely different, whilst the habits of the two plants are nearly similar.

An evergreen stove Fern.

Native of the East Indies and Malacca.

The fronds, which are deeply pinnatifid, are rigid and triangularly-elongate. Pinnæ alternate and elongate, apex ending in a fine point, about twenty pairs and an ultimate one.

[illegible]is external, elevated, prominent, compound anastomosing, and forming quadrate areoles.

Stipes, rachis, and primary veins a pinkish brown.

Sori oblique and uniserial, brown, oblong.

Length of frond from two to three feet; colour a blue green; length of pinnæ about ten or twelve inches; width rather more than an inch.

As soon as the present species can be procured, it should find its way into every collection. It will make a glorious-looking exhibition plant; unfortunately it may be some years before we shall be able to see it in ordinary collections.

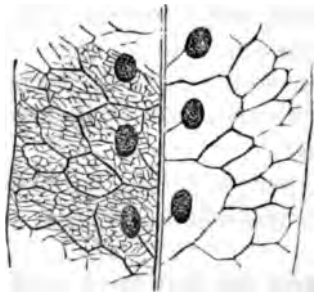
For a frond of *P. coronans* I am indebted to Mr. J. Smith, Curator of the Royal Gardens, Kew.

It is not in any Nurseryman's Catalogue.

The illustration is from Mr. Smith's frond.

POLYPODIUM SACCATUM.—PORTION OF FROND.

LIX—Vol. 2.



Portion of mature Frond—under side.

POLYPODIUM SACCATUM.

LOWE, (*not of* FEE.)

PLATE LIX. VOL. II.

Phymatodes saccata, J. SMITH.

Polypodium—Polypody. *Saccatum*—In a bag.

IN THE SECTION DRYNARIA OF AUTHORS.

THIS is truly a magnificent Fern; its pendulous habit and bold shining fronds, with the deeply immersed sporangiferous receptacles, raising on the upper side extremely prominent tubercles, are features that make it an exceedingly distinct Fern, and at the same time a remarkable and glorious object.

Polypodium saccatum is very rare in cultivation in this country, indeed I believe that it is only to be found at Kew.

It is an evergreen stove species.

Native of Java.

The fronds are pinnatifid, having a lengthy stipes; they are smooth, the sinus wide, obtuse, and rounded; laciniæ broadly

lanceolate, acuminate, caudate, and subfalcate. Eight to ten pairs, with an ultimate one; these are from eight to ten inches long, and about an inch and a quarter wide.

Veins external, prominent, widely apart, especially the basal ones, compound anastomosing, forming hexagonal areoles.

Sori transversely uniserial, from twelve to eighteen pairs on each segment; circular.

Sporangiferous receptacles deeply immersed, forming a row of elevated, truncate, papilliform tubercles on the upper side of the laciniæ.

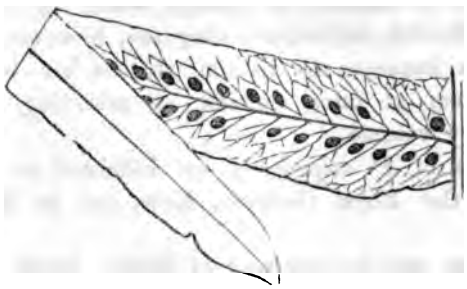
Length of frond from two feet to two and a half.

My thanks are due to Mr. J. Smith, Curator of the Royal Gardens, Kew, for a frond of this species.

It is not as yet to be procured from any of the Nurserymen. The illustration is from Mr. Smith's frond.

POLYPODIUM COLPODES.

LX—Vol. 2.



Pinna of barren Frond—under side.

POLYPODIUM COLPODES.

KUNZE.

PLATE LX. VOL. II.

Goniophlebium colpodes, J. SMITH.

Polypodium—Polypody. *Colpodes*—Abounding in bays.

IN THE SECTION GONIOPHLEBIUM OF AUTHORS.

A RARE attractive Fern.

An evergreen stove species.

Native of Venezuela.

Fronds pinnate, except near the apex, where they are pinnatifid; linear-lanceolate; pinnæ approximate, sessile, alternate or sub-opposite, elongate; apex acuminate, unequal in size; about twenty-five pairs and an ultimate one.

Veins anastomosing, with a free excurrent venule in each areole, club-headed, and on which at its apex the sporangia is situated.

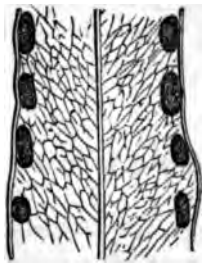
Sori uniserial, medial, about twenty pairs on each pinna.

Length twenty-four inches, of which the lower four to six inches is naked; colour a dull green.

In concluding the natural history of the *Polypodium* family, there will be a number of species found figured which are new to our British cultivators; they are, however, so beautiful, and in most instances so distinct, that it has been desirable to figure them at once, instead of reserving them for the supplementary volume.

For fronds of *P. colpodes* I am indebted to Mr. J. Smith, Curator of the Royal Gardens, Kew, and to Messrs. Booth, of Hamburg.

This species may be procured of Messrs. Booth, of Hamburg. The illustration is from Mr. Smith's frond.



Portion of mature Frond—under side.

POLYPODIUM LONGIFOLIUM.

LOWE.

PLATE LXI. VOL. II.

Phymatodes longifolia,	J. SMITH.
Grammitis longifolia,	BLUME.
Drynaria revoluta,	J. SMITH.
Polypodium contiguum,	WALLICH.

Polypodium—Polypody. *Longifolium*—Long-leaved.

IN THE SECTION DRYNARIA OF AUTHORS.

AN interesting rare Fern.

A stove species; evergreen.

Native of Malacca, Java, and Luzon.

Fronds simple, linear-lanceolate, increasing in width for a third of the length of the frond, then widest, and gradually narrowing for the upper two-thirds; apex acuminate. Stem ebeneous at the base.

Veins immersed, indistinct, and anastomosing.

Sori prominent, uniserial, submarginal, oblong, or oval, and formed on the upper two-thirds of the frond, extending nearly to the apex; about forty pairs; colour a brownish orange, and raising umbones on the upper side of the frond.

Length from twenty to twenty-two inches; colour a bright shining green.

Rhizoma creeping.

This species has more the looks of a *Scolopendrium* than of a *Polypodium*.

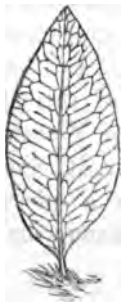
Perhaps best known as the *Phymatodes longifolia*.

A charming Fern, remarkably distinct from all others. The submarginal line of sori, and the raised oval-shaped umbones shewing the place of the sori when viewing the frond from the upper surface, render it an exceedingly desirable species to all lovers of the curious and beautiful in this tribe of plants.

For fronds I am indebted to Mr. J. Smith, Curator of the Royal Gardens, Kew; and to Messrs. Booth, of Hamburg.

This species may be procured of Messrs. Booth, of Hamburg.

The illustration is from Mr. Smith's frond.



Barren Frond—under side.

POLYPODIUM OWARIENSE.

DESVAUX. KUNZE.

PLATE LXII. VOL. II.

Goniophlebium Owarense,	LODDIGES' CATALOGUE.
Polypodium ovariense,	SPRENGEL.

Polypodium—Polypody. *Owariense*—Owarian.

IN THE SECTION GONIOPHLEBIUM OF AUTHORS.

Polypodium Owariense is only to be met with in our largest collections; it is a diminutive pretty Fern, and is an attractive object when well cultivated. Mr. J. Henderson, of Wentworth, has some fine specimens.

An evergreen stove species.

Native of Sierra Leone and Guinea.

Introduced into this country in the year 1849.

Fronds simple, sessile, very smooth, and subcoriaceous. Veins parallel. Sterile fronds obovate-elliptic, and repand. Fertile fronds linear-lanceolate, very bluntly undulated.

zoma covered with hairy scales of a pale brown colour.
barren and fertile fronds different in form.
ngth of frond one inch; colour deep blue green.

The general habit and appearance is very similar to *P. vaccinifolium*, figured in Vol. I, Plate XLI.—A.

a plant and fronds of this species my thanks are due Joseph Henderson, of Wentworth.

ay be procured of Mr. R. Sim, of Foot's Cray.

illustration is from a piece of rhizoma and fronds ied by Mr. Joseph Henderson.

GENUS V.

STRUTHIOPTERIS.

HAVING fronds of two kinds, the barren ones large and bold and the fertile much smaller, with contracted resolute margins, forming as it were a universal indusium.

Veins pinnate and free.

Spore cases lateral; the base of the pedicels concrete, and producing an elevated thickened receptacle.

The habit of the genus exceedingly beautiful, and very distinct.

Most authorities consider that there are two species, one from Germany and the other a native of North America, yet they are scarcely distinguishable; probably the geographical separation of the two plants has had more to do with placing them as distinct species, than any specific difference in the plants themselves.

STRUTHIOPTERIS GERMANICA.

LXIII—VOL. 2.

Pinna of barren Frond—under side.

STRUTHIOPTERIS GERMANICA.

WILLDENOW. J. SMITH. FEE. KUNZE. PRESL. LINK. KAULFUSS. SPRENGEL. MOORE AND HOULSTON.

PLATE LXIII. VOL. II.

Onoclea struthiopteris,	SWARTZ. SCHKUHR. HOOKER. ROTH.
Osmunda struthiopteris,	LINNÆUS. GUNN.
Struthiopteris Pennsylvanica,	WILLDENOW. KUNZE. SMITH. MOORE.
Onoclea nodulosa,	SCHKUHR.

Struthiopteris—The Ostrich Fern. *Germanica*—German.

Struthiopteris Germanica is the king of the hardy Ferns; easily cultivated and rapidly propagated from its long creeping rhizoma, sometimes running beneath the surface of the ground for seven or eight feet, and there throwing out its fronds, far away from the parent plant. The symmetry in the habit of the plant, its large barren fronds placed in a single row around the caudex, so as to produce a circle, whilst its fertile fronds, which are singular in form, rise up in the centre; these, added to its easy culture and perfect hardihood, must claim for it a place in every out-door Fernery.

Introduced into this country in the year 1760.

A hardy deciduous species.

Native of Germany and North America.

Nearly every authority considers the *S. Germanica* as a distinct species; that is, distinct from *S. Pennsylvanica*, nevertheless they so nearly approach each other in the form of the

fronds, and in their general appearance, that I have been induced to call the American plant merely as a variety of the German form. In the plants which I possess, the only difference which I have been able to observe, has been that *S. Germanica* variety *Pennsylvanica* is more erect in habit. For the present therefore we shall consider them identical.

This ornamental species has the barren and fertile fronds different; the barren fronds are arranged in a circle on the outside of an erect caudiciform rhizoma. Near the rhizoma the circle formed by the fronds is about six inches in diameter, whilst from all of them reclining at an angle of about 50°, this circle near the apex of the fronds is as much as six feet in a large plant.

Fronds pinnate, with pinnatifid acuminate pinnæ, which diminish in length from the centre of the frond, both towards the base and apex.

Length of fertile frond from twenty-four to forty-eight inches, according to age and situation.

Fertile fronds pinnate, contracted, rising perpendicularly from the centre of the rhizoma, and consequently equi-distant from each barren frond; from twelve to eighteen inches in length; deep in colour; and bearing some resemblance to a bunch of feathers. The pinnæ crowded, linear, revolute, and moniliform.

Veins pinnate and free.

Sori circular, confluent.

Barren fronds a vivid pale green in colour, gradually fading and having a white appearance near the base of the frond, long before the upper portion has faded. The barren fronds spring up early in spring, and grow rapidly, whilst the fertile ones do not appear till summer.

S. Germanica should be planted where it can have plenty of room to spread in all directions; in such a situation it will in course of time form a large and beautiful diminutive summer forest.

My thanks are due to Sir Oswald Mosley, Bart., for plants of the German form; and to Mr. R. Sim, of Foot's Cray, for others of the variety *Pennsylvanica*.

The species can be procured of any Nurseryman.

The illustrations are from barren and fertile fronds gathered from plants in Fernery at Highfield House.

GENUS VI.

NEVRODIUM. Fee.

There is only a single representative of this genus.

Frond simple, lanceolate in form, the upper half of which is fertile and contracted.

Veins anastomosing.

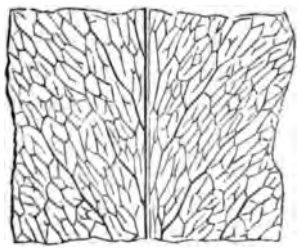
Sori linear, continuous, and marginal.

This genus has much the appearance of a *Pteris* destitute of an indusium.

BIBLIOTHECA BODLEIANA

NEPHRODIUM LANCEOLATUM. HYMENOLEPIS SPICATA.

LXIV - Vol. 2



Portion of mature Frond—under side.

NEVRODIUM LANCEOLATUM.

FEE. J. SMITH.

PLATE LXIV.—A. VOL. II.

Pteris lanceolata,	LINNÆUS. PLUMIER.
" "	SWARTZ. SPRENGEL.
Tænitis lanceolata,	KAULFUSS. KUNZE. R. BROWN.
Pteropsis lanceolata,	DESVAUX. PRESL.
Drymoglossum lanceolatum,	J. SMITH. MOORE & HOULSTON.

Nevrodium—Fibrous or sinewy. *Lanceolatum*—Lance-shaped.

AN interesting very rare species, having much the looks of a *Pteris;* rare in cultivation.

An evergreen stove Fern.

Native of Jamaica, St. Domingo, and Barbadoes.

Introduced into the Royal Gardens, Kew, in 1843, by Mr. W. Purdie.

Fronds simple, lanceolate, contracted at the apex, where they are soriferous; base attenuated.

Veins compoundly anastomosing, producing variously directed free veinlets. Venation internal.

Sori linear, continuous, and intramarginal, situated on the upper portion of the frond.

Fronds lateral, articulated on a creeping rhizoma.

Length of frond from ten to sixteen inches; colour a rich pale green.

For a frond of this species I am indebted to Mr J. Smith, Curator of the Royal Gardens, Kew.

It is not in any of the Nurserymen's Catalogues.

The illustration is from Mr. Smith's frond.

GENUS VII.

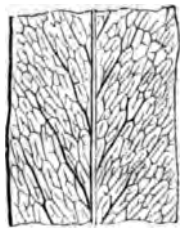
HYMENOLEPIS. Kaulfuss.

Another genus represented by a solitary species.

Frond linear-lanceolate, the upper portion suddenly contracted and revolute, forming a fertile linear spike.

Veins, which are internal, are compound-anastomose.

Sori linear, confluent longitudinally.



Portion of mature Frond—under side.

HYMENOLEPIS SPICATA.

PRESL.

PLATE LXIV.—B. VOL. II.

Hymenolepis ophioglossoides,	KAULFUSS. KUNZE.
" "	SPRENGEL. FEE.
" *revoluta,*	BLUME. KUNZE.
" "	SCHKUHR. MOORE.
Acrostichum spicatum,	LINNÆUS. SMITH. CAVANILLES.
Lomaria spicata,	WILLDENOW.
Gymnopteris spicata,	PRESL. J. SMITH.
" *revoluta,*	MOORE AND HOULSTON.
Hyalolepis revoluta,	KUNZE.
Onoclea spicata,	SWARTZ.

Hymenolepis—Covered with rind or husk. *Spicata*—Spiked.

So dissimilar is *Hymenolepis spicata* from other Ferns, that it deserves a place in every collection. The linear-lanceolate form, with the abruptly contracted linear upper half of the frond, give the idea of a frond with a stem above as well as below. A very rare Fern.

An evergreen stove species.

Native of the Malayan Archipelago, Java, etc.

Frond simple, linear-lanceolate in form, almost stalkless, glabrous, half an inch wide below, terminating in a fertile linear apex, that is, the upper portion being abruptly contracted and revolute, forming a fertile linear spike.

Veins internal, compound-anastomosing; primary veins obsolete.

Sporangiferous receptacles longitudinally confluent, forming a linear sorus, which is furnished with numerous scales.

Rhizoma creeping.

Length of frond six to nine inches, of which the upper half is fertile, and contracted into a round, slender, long point, which is very striking when the orange-coloured seed-masses are mature. Fronds thick, shining, and deep green.

For fronds of this Fern my thanks are due to Mr. J. Smith, of the Royal Gardens, Kew; Messrs. Booth, of Hamburg; Mr. Sim, of Foot's Cray; Mr. Joseph Henderson, of Wentworth; Mr. G. Norman, of Hull; and Messrs. Rollisson, of Tooting.

This species may be procured of Messrs. Sim, of Foot's Cray; Booth, of Hamburg; Veitch, Jun., of Chelsea; and Rollisson, of Tooting.

The illustration is from a frond sent by Mr. R. Sim, of Foot's Cray.

GENUS VIII.

VITTARIA. J. Smith.

An interesting small tribe of plants, two species of which have been introduced into this country.

The fronds are simple, linear, and smooth.

Habit pendulous.

Veins simple, forming an acute angle with the midrib, and having their apices prolonged into a transverse marginal vein, which eventually becomes the sporangiferous receptacle.

Sori marginal or slightly intramarginal, being a continuous line, looking like the fructification of the *Pteris* without the indusium.

Portion of mature Frond—under side.

VITTARIA LINEATA.

SMITH. SCHKUHR. SCHLECHTENDAL.

PLATE LXV.—A. VOL. II.

Vittaria graminifolia,	KAULFUSS. KUNZE. SPRENGEL.
" "	PRESL. LEIBMANN.
Tænitis linearis,	MARTENS AND GALLEOTTI.
Tæniopsis lineata,	J. SMITH. SWARTZ.
" "	MOORE AND HOULSTON.
" *graminifolia,*	J. SMITH. MOORE & HOULSTON.

Vittaria—Riband-shaped. *Lineata*—Linear.

So narrow are the fronds of *Vittaria lineata* that they have the appearance more of a leafless stem than of a frond. Rare.

An evergreen greenhouse species.

Introduced into this country in 1820, but extremely rare in cultivation.

Native of Tropical America, Brazil, and Venezuela. It is a common species in Mexico. Leibmann found it at S. Pedro Tepinapa, and at Teotalcingo, both in the district of Chinantla, of the department of Oajacas; at Mirador, Huatusco, Chinantla, department of Puebla, at an altitude of seven thousand feet; on Cerro de Sempoaltepec, in Oajaca, at an altitude of nine

thousand feet. Schiede found it at Jalapa, Hacienda de la Laguna, and Huitamalco.

In Mexico it grows on old trunks of forest trees, from the hottest east coast to above nine thousand feet altitude.

Fronds simple, linear-lanceolate, glabrous, pendulous, and coriaceous; the barren frond much shorter and much thinner.

Veins internal, very few, simple, parallel, and their apices combined, forming a transverse sporangiferous receptacle.

Fronds lateral, forming a dense tussacky mass, on a short, creeping, scaly rhizoma.

Sori intramarginal, in a groove which runs nearly the whole length of the frond.

Length from twelve to twenty-four inches; breadth an eighth of an inch.

For fronds of *Vittaria lineata* my obligations are due to Mr. J. Smith, Curator of the Royal Gardens, Kew.

This species may be procured of Messrs. Booth, of Hamburg, and A. Henderson, of Pine-apple Place.

The illustration is from a frond sent by Mr. Smith, of Kew.

Portion of mature Frond—under side.

VITTARIA ZOSTERÆFOLIA.

WILLDENOW. FEE. SMITH. SPRENGEL. PRESL.

PLATE LXV.—B. VOL. II.

Vittaria angustifrons, BORY.

Vittaria—Riband-shaped, (in allusion to the form of the frond.)
Zosteræfolia—Zostera-leaved.

ANOTHER very rare exceedingly narrow-fronded species, equally interesting with that last described.

An evergreen stove species.

Native of the Mauritius.

Fronds pendulous, linear, membranaceous, and smooth.

Veins simple, forming a very acute angle with the midrib, and their apices prolonged into a transverse marginal vein.

Sori marginal, linear, and continuous.

A larger and broader species than *Vittaria lineata.*

Length about two feet.

Midrib of frond sunk so as to be invisible.

The present species is in looks a gigantic *Vittaria lineata.*

As it is only yet to be seen at Kew, I am unable to speak with regard to its cultivation, or as to whether it is easy or difficult to manage.

For fronds of this Fern I am indebted to Mr. J. Smith, Curator of the Royal Gardens, Kew.

It is not in any Nurseryman's list.

The illustration is from Mr. Smith's frond.

GENUS IX.

CERATOPTERIS. Brongniart.

Only a single species is in cultivation in this country. It is a water Fern, and will thrive well if plunged to the rim of the pot in a tank of water.

Fronds fragile; the fertile fronds decompound; the segments forked and linear; margins revolute and membranaceous.

Veins transversely elongated and distantly anastomosing.

Sori disposed in a simple series, constituting two linear subparallel sori.

CERATOPTERIS THALICTROIDES.

LXVI—Vol. 2.

Portion of fertile Frond—under side.

CERATOPTERIS THALICTROIDES.

BRONGNIART. HOOKER AND BAUER. SMITH. LINK. PRESL.

PLATE LXVI. VOL. II.

Ellobocarpus oleraceus,	KAULFUSS.
Acrostichum thalictroides,	LINNÆUS. BURMANN.
" *siliquosum,*	LINNÆUS. BURMANN.
Furcaria thalictroides,	DESVAUX.
Pteris thalictroides,	SWARTZ. WILLDENOW.
" *esculenta,*	OF GARDENS.
" *ferulacea,*	RICHARDS.
Ceratopteris Parkeri,	J. SMITH. MOORE & HOULSTON.
Parkeria pteroides,	HOOKER AND BAUER.

Ceratopteris—The Horn Fern. *Thalictroides*—Allheal.

THE *Ceratopteris thalictroides* is a most singular Fern. It is a water-plant, growing in stagnant pools in hot climates. The

peculiar habit of the plant, and the stag's-horn looking fronds render it an interesting plant.

An evergreen stove Fern.

Native of the American Meridian, Asia, the East Indies, and China.

It was raised from spores in the year 1834.

Barren and fertile fronds different; glabrous.

Sterile fronds bipinnatifid, reclining, having oblong obtuse segments.

Fertile fronds contracted considerably; habit erect, three or four times pinnate, having linear-revolute segments.

Length of barren frond from twelve to eighteen inches; fertile fronds from twenty to thirty inches; colour light green.

Sori linear, continuous, parallel, and superficial. Sori hid by the reflexed margin of the segments.

Veins transversely elongated and distantly anastomosing.

Stipes nearly quadrangular.

Both barren and fertile fronds are viviparous.

C. Parkeri only differs in regard to the elastic spring of the spore-case, yet as Mr. Smith has raised *C. thalictroides* from spores of *C. Parkeri*, it cannot be distinct.

I have received plants of this Fern from Mr. Joseph Henderson, of Wentworth.

It is in the Catalogues of Messrs. Sim, of Foot's Cray; E. G. Henderson, of St. John's Wood; Veitch, Jun., of Chelsea; A. Henderson, of Pine-apple Place; and Kennedy, of Covent Garden.

The illustration is from a plant in my own collection.

CONTRIBUTORS TO VOL. II.

The author begs to thank the following individuals who have kindly supplied plants and fronds for illustration.

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Mr. Stratton, Botanic Gardens, Cambridge.
Messrs. Veitch, Jun., Exotic Nursery, Chelsea.

GLOSSARY FOR VOL. II.

The terms not explained in the other Glossaries and used in Vol. II., will be found in the Glossary which accompanies Vol. V.

AUTHORITIES QUOTED IN VOL. II.

Bauer.
Blume.
Bonpland.
Bory.
Braun.
Brown, R.
Brongniart.
Burmann.
Cameron, D.
Cavanilles.
Christie, J.
Cunningham, A.
Desvaux.
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Fee.
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Plumier.
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Raddi.
Reinwardt.
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Schiede.
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Swartz.
Sweet.
Wallich.
Willdenow.

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[Those Ferns having *an authority* attached are the respective names adopted in this Work, of which a description, together with a Coloured Illustration and one or more Woodcuts, are given. Names not having an authority attached, are those adopted by other authors, and are therefore to be found under other names.]

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